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Industrial arts merit badges earned by Iowa Eagle Scouts

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INDUSTRIAL ARTS MERIT BADGES EARNED BY IOWA EAGLE SCOUTS

by

Richard Charles Eichacker

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of
The Requirements for the Degree of
MASTER OF SCIENCE

Major Subject: Industrial Education

Signatures have been redacted for privacy

Iowa State University
Of Science and Technology
Ames, Iowa

1961

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INTRODUCTION

The Merit Badge Program

Youth of today do not rely entirely on the school, home or church to satisfy all his needs for individual or group development. For most youth there are available various organizations which help guide his interests and skills into acceptable social, spiritual and vocational channels. One such guidance and character building organization is the Boy Scouts of America. This national organization was incorporated on February 8, 1910, under the laws of the District of Columbia. Five years later on June 15, 1916, the Boy Scouts were chartered by Congress (7, p. 1).

In order to provide each Scout the opportunity for prevocational exploration the chartered corporation established a merit badge program as part of the overall Boy Scout movement. This elective program or merit badge plan provided a broad range of adventure into varied fields of skill and knowledge. The Scout who undertakes a merit badge has begun to explore and analyze his world. He was looking ahead to a possible vocation to be chosen at a later date. The implications of the merit badge idea were that a Scout begins to think ahead, to take an early step in planning a full, worthwhile life; eventually finding that lifework that can lead

him toward his greatest happiness and usefulness (6, p. 3).

In addition to being the elective part of Boy Scouting the merit badge plan was also a continuation of the earlier Cub Scouting achievement and elective program. Except for certain required merit badges for Star, Life and Eagle, the three highest Scouting rank, the Scout was free to follow his own merit badge program.

The merit badge program made available over 100 different subjects from which a boy could make a selection. These subjects or merit badges covered a wide variety of interests and hobbies. They offered an outlet for a boy's natural curiosity. The merit badges provided the Scout with a means of acquiring knowledge and skill, develop physical fitness, self-reliance and the ability to help other people.

Statement of the Problem

This thesis was concerned with an analytic study of twenty-one badges related to some phase of industrial arts as taught in the secondary industrial arts and/or vocational industrial education courses. The badges were selected from five of the fifteen general groups designated by the Boy Scout organization. They were as follows: Architecture, Art, Mechanical Drawing, Photography, Pottery and Woodcarving from the Art Group; Electricity, Farm Mechanics, Home Repairs, Machinery, Masonry, Metalwork, Painting, Plumbing and Woodwork

from the Building Group; Printing and Radio from the Communication Group; Basketry, Bookbinding and Leather from the Crafts Group; and Automobiling from the Transportation Group (5).

This study was concerned with the attitudes of Eagle rank Boy Scouts toward industrial arts type merit badges. To provide answers to this problem the following information was sought: 1. The type of environment in which the Scouts' homes were located. 2. The grade level in school of those Scouts who were students. 3. The industrial arts courses taken by Scouts while in school. 4. The Scouts' attitudes toward attending college. 5. The percentage of all merit badges that were of the industrial arts type. 6. The average age of the Scouts sampled. 7. The percent of Scouts who earned each of the selected merit badges. 8. The order in which the industrial arts merit badges were earned. 9. The degree of difficulty encountered by the Scouts who earned the industrial arts merit badges. 10. The extent at which Scouts earned each badge in conjunction with other Scouts. 11. The industrial arts merit badges preferred next, when given an equal opportunity to obtain them. 12. The industrial arts merit badges easiest to earn. 13. The industrial arts merit badges most difficult to earn. 14. The relationship existing between various characteristics of merit badges selected. 15. The primary and secondary reasons Scouts

selected each badge. 16. The primary and secondary sources of information used by the Scouts in supporting each of the merit badges. 17. The personnel that primarily and secondarily assisted the Scouts in earning each merit badge. 18. The school subjects that primarily and secondarily influenced each of the merit badges. 19. The primary and secondary difficulties encountered by the Scouts with each of the merit badges. 20. The kinds of projects completed for each of the badges. 21. The types of final tests or reviews administered for each merit badge. 22. The comparison of industrial arts badges earned by Scouts sampled with those earned by all Scouts nationally over a three and a fifty year period.

Significance of the Problem

The increasing interest in the Boy Scout movement, shown not only by youth but also leaders and sponsoring organizations, played an important part in the need for a study of this kind.

Scouting has become a true representative of the nation. In nearly every community in this country a Scouting unit of some type has been organized. Ever since Scouting had its beginning in 1910 it has experienced a steady increase in both Scout and leader membership. The total membership of enrolled and active members for the year 1960 was well over

the five million mark (14, p. 13). The largest single sponsoring institution of Scouting units in 1960 was the Parent-Teacher Associations (14, p. 82). In that year the Parent-Teacher Associations ranked an average second in each of the twelve National Scouting Regions by supporting a total of over twenty-one thousand different Scouting units (14, p. 76).

According to information available to this investigator, no other study comparable to this type has ever been conducted on a group of merit badges. This implied that this study may serve as a pilot study for any later local or national merit badge investigations of this type.

Making use of deductive reasoning the following syllogism was proposed: The State of Iowa ranks as a typical Scouting state in the nation. The results were obtained from a cross section of Iowa Scouts. Therefore the results lend themselves as being typical of Scouts in the nation. The low validity of this type of reasoning was taken into consideration, but the possibility of significance should not be entirely discounted.

For the future Eagle Scouts who wish to pursue their industrial arts interests and abilities this study can serve as a planning guide. When studying the finding of this report the Scouts can better estimate the opinions of other Scouts who have earned any of the industrial arts merit

badges. The investigation established some of the traits possessed by the highest ranking Boy Scouts.

The results obtained could play an important role in planning future merit badge programs by providing beneficial information to several different scouting positions. Besides the individual Scouts, the Scoutmasters could use the results when planning their instructional and activities programs. The local troop committees could utilize this information when appointing merit badge counselors and arranging the use of the communities' resources. The merit badge counselors could employ the findings in guiding their assigned Scouts. Members of the professional Scouting staffs on all levels from district to national offices could profit from the outcome of this inquiry. Due to the Scout Executives' experiences with similar analytic reports, they can evaluate the presented information and conclusions with greater positive predictions. They are also better qualified to detect the significant data and apply them to their level of scouting.

This investigation contained inferences common to both Scouting and the school. Various inquisitions have been conducted and articles written on the relationship of these two educational institutions. In a study by Wyland (15, pp. 150-152) on the relationship of Scouting in the school he said:

> The larger service to youth contemplated through mutually helped relationships between the school and

> the Boy Scout movement will be realized, it is evident, not so much in discovering new ways to work together to increase the effectiveness of both agencies, but rather in applying the methods and policies of demonstrated value.

Using a specific example he stated:

> There are many opportunities for school men and women to help their boys to a more satisfying scouting experience. These opportunities come within the range of the customary school practice and involve very little, if any, additional expense to the school budget or additional work to the faculty.

One suggestion he made relating to merit badges in particular was:

> Providing for and encouraging school-Scout clubs, in the school club program, to stimulate prevocational exploration through the medium of the merit badge projects.

There were other ways in which the schools stimulated merit badge projects within a specific class or course. The industrial arts programs and their teachers were the best example of such a cooperative assistance program. This analysis was therefore of prime importance to the industrial arts and vocational education teachers both in and outside of the classroom.

Because of increased emphasis upon guidance and counseling in the secondary schools this inquiry was of value to the school counselor. This information, along with the variety of other vocational subjects in a merit badge program and the overlapping school-Scouting objectives should all be considered by a counselor when helping boys interested in

Scouting. Character, citizenship and self-reliance are some of the traits which can be fostered by the Scouting movement and successfully applied in the school. In some cases, the merit badge counselors have provided the school guidance counselors with useful supporting information and materials about Scouting and the boys.

In conclusion, the problem was considered significant from the standpoint of its possible assistance to school administrators. The administration of a school in which a boy participated in both the Scouting and school programs could find these results beneficial to either or both of the programs. The school administrators carry a large responsibility for today's youth and therefore, any cooperation with Scouting could be to the school's advantage.

Purposes of the Study

The purpose of this study was to ascertain the answers to the following questions:

1. What current facts can be made available concerning the industrial arts merit badges of the Boy Scout movement?
2. What influence do the industrial arts merit badges have upon the merit badge program?
3. What are some of the interrelationships existing between the industrial arts merit badges?

4. Under what circumstances do the Scouts undertake the acquisition of each industrial arts merit badge?

Basic Assumptions

Certain assumptions were formulated concerning the information to be gathered and evaluated. Eagle Scouts were selected as a sample with the assumptions that: 1. Eagle Scouts would be the most willing and capable to assist in answering the questionnaire because of age and character; 2. Eagle Scouts would represent a cross section of the survey area; 3. The number of Eagle Scouts in a three year period would be economically and statistically adequate; 4. The names and addresses of all Eagle Scouts could be made available by their council Scout Executives; 5. Eagle Scouts possessed the greatest possibility of having earned industrial arts merit badges; 6. And no random sampling would be required because all Eagle Scouts could be contacted directly.

A prerequisite to the awarding of the merit badge was that each badge be earned in accordance with the rules and regulations governing merit badges. It was taken for granted that a varying degree of difficulty existed between any two merit badges due to human abilities and varied requirements. None of the selected merit badges were required

for advancement in rank. It was therefore presumed that each Scout had considerable freedom in the selection of a badge. Another conditions established that each badge selected for study was related to industrial arts taught in secondary high schools. It was further believed that if the time between the date of rank and inquistion was held to a minimum a higher percent of questionnaire return would be experienced. The final supposition was that the validity of the overall study would remain high enough so that the findings could apply to all Boy Scouts in Iowa and to Scouts in general who have earned industrial arts merit badges.

Limitations

This study contained several limitations which are now presented for consideration and evaluation.

In the first place, the Scouts questioned for information became Eagle Scouts while living within an area comprising councils number 171-173, 175-179 and 184-186 (14, p. 220) as shown in Appendix A. This area included all of Iowa except Lyon County, the northwestern most county in the state (14, p. 106).

In the second place, questions were confined to Scouts who attained their Eagle rank over a three year period from January 1958 to January 1961.

In the third place, the varied lengths of time between

the awarding of the badge and the receiving of the questionnaire may have influenced the realibility of the answers. This situation came about because of several circumstances. A Scout was permitted to earn any of the industrial arts badges from the time he obtained his Second Class rank (4, p. 7). This further implied that badges could have been earned when a Scout was at the minimum age of eleven. The average age of Scouts responding to the questionnaire was 16.7 years old (see Findings). Some respondents had been Eagle Scouts for three years while still others only a matter of weeks. There was no limit as to the number of badges that could be earned. Many Scouts continued earning badges after attaining the highest rank.

In the fourth place, the validity and reliability of the data were considered. The requirements for any particular merit badge were susceptible to change due to modern methods and materials. The industrial arts merit badges which received requirement changes or major revisions over the last three year period were: Farm Mechanics and Architecture in 1958 (12, p. 15), Home Repairs and Photography in 1959 (13, p. 14), and Automobiling[1] in 1960 (14, p. 26). Other factors were the proximity of the Scout to his records, the

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[1]Commencing 1961 the title of the Automobiling merit badge will be referred to as the Automotive Safety merit badge. This study continues to use the former title.

Scout no longer active in Scouting, the time of year the study was conducted in relation to semester examinations and the high percentage of returned enclosures of encouragement and comments.

In the fifth place, this study was limited to twenty-one of the 100 merit badges available (13, p. 148-149). The twenty-one industrial arts related merit badges were: Architecture, Art, Automobiling, Basketry, Bookbinding, Electricity, Farm Mechanics, Home Repairs, Leatherwork, Machinery, Masonry, Mechanical Drawing, Metalwork, Painting, Photography, Plumbing, Pottery, Printing, Radio, Woodcarving, and Woodwork.

In the sixth place, some of the selected merit badges fell into areas not strictly industrial arts in nature. Photography was related to general science and physics in addition to industrial arts. Some subjects like Masonry and Woodcarving were included because they embodied some shop skills that are sometimes performed in the school shop by the Scout.

In the seventh place, the regulations for advancement in rank were stated in such a manner that an Eagle Scout with the minimum number of merit badges, twenty-one, could hold from zero to six of the merit badges employed in this study (4, p. 15).

In the eighth place, a questionnaire (see Appendix B)

was mailed directly to the Scouts whose names and addresses were provided. A 66 percent return was experienced without the use of a follow-up notice. From a statistical standpoint the return percentage was considered sufficient, but was still judged as a limiting factor in the evaluation of the actual conditions.

In the ninth place, the utilization and interpretation of necessary correspondence with both Eagle Scouts and professional Scouting administrators was considered a limitation in the accuracy of the study.

Definitions

To aid in the explanation of the data presented in this study, a definition of the terms follows:

"Merit Badge" or "Badge" - referred to as an award presented to a Scout when he completed the requirements for one of the over 100 avocational fields. It was a circular piece of khaki cloth embroidered with a symbolic design for each of the different subjects. It was used as a means of advancement, encouraging individual achievement and recognition.

"Industrial Arts Merit Badge" - referred to as anyone of the twenty-one selected merit badges related to an industrial arts course or skill taught in the secondary school. In this study all references to 'merit badge' or 'badge'

refers to an industrial arts merit badge unless otherwise stated.

"Merit Badge Pamphlet" - referred to anyone of a series of publications which contained information helpful to the Scout in passing the requirements for each particular merit badge.

"Merit Badge Counselor" - referred to an appointed adult man who assisted the Scout movement by guiding and counseling Scouts in one or more merit badge subjects. His mission was to: 1. assist the boy in planning a program of projects and activities to meet the merit badge requirements, 2. personally counsel the boy through interviews, field trips and demonstrations, and 3. certify the boy after reviewing the requirements to determine if the Scout is qualified for the merit badge (5).

"Merit Badge Plan" or "Merit Badge Program" - referred to the entire elective program that provided a Scout the opportunity for vocational and hobby exploration. In addition, it included information directed towards any of the subjects and awards which recognized the Scout's advancement.

"Boy Scout" - referred to any boy eleven years of age, registered with the Boy Scouts of America and has actively participated in the advancement in Scouting.

"Explorer Scout" - referred to any boy fourteen years

old and in the ninth grade or higher, or fifteen years old regardless of grade, who was registered and has participated in a senior Scouting program.

"Eagle Scout" - referred to a Boy Scout who had attained the highest Scouting rank by demonstration of growth in Scout teamwork, Scoutcraft and Scout spirit the three phases of advancement.

"Boy Scout Handbook" or "Scout Handbook" (3) - referred to an official illustrated mannual copyrighted by the National Council of Boy Scouts of America for the development of boys in Scouting.

"Scoutmaster" - referred to a volunteer leader who was responsible for carrying out the planning, training, and coordination of the Scouts.

"Board of Review" - referred to a panel of prominent men in a community who condusted oral reviews of the Scouts' accomplishments and service to their Scout troops and community for advancement to the three highest ranks.

"District" - referred to the basic administrative organization on a territorial basis for the coordination of various Scouting units.

"Area Council" or "Council" - referred to an administrative organization composed of several districts which maintained an office with one or more employed officials under the direction of a Scout Executive. This study

covered an area consisting of eleven councils as shown in Appendix A.

"Region" - referred to as one of twelve administrative units comprised of councils whose geographical lines closely followed those of the Federal Reserve System (1, p. 135). Each region had an office and was assigned members of the national staff. Supported by a volunteer regional committee these staff members provided direct help to local councils. The area from which data were obtained for this study came under Region Eight juristiction.

"National Council" - referred to a governing body responsible for the functioning of the Boy Scouts of America. The National Council's movements were controlled through an Executive Board responsible for electing an executive officer, the Chief Scout Executive (1, p. 129).

REVIEW OF LITERATURE

Periodically studies and research concerned with Scouting have been conducted as evidenced by the statement made in the 1959 Annual Report (13, p. 40):

> The Boy Scouts of America has long recognized the need for the constant study and evaluation of its program and operations. In carrying out this responsibility it conducts directly or in cooperation with universities and other groups a variety of research projects each year. It strives to encourage an attitude of constructive criticism and creative inquiry throughout the movement and to keep the movement informed of new developments in fields effecting youth.

Many of these studies have been concerned with Scouting and its relation to the school and education, to characteristics of Boy Scouts, Scouting publications and various other sociological phases of organized youth. This cross-sectional survey was concerned with the attitudes of the highest ranking Scouts towards industrial arts type merit badges.

Studies with regard to particular merit badges have been conducted annually for revisional purposes by the National Council with the help of various experts. A special committee referred to as the Merit Badge Development Committee was delegated this responsibility. The organizational structure of this committee was composed of professional leaders, who, through their Scouting associations, have recourse to advice and help from volunteer leaders. If

indications showed that a merit badge subject was out of date and required revision the Boy Scouting Service referred the suggestions for these revisions to the Development Committee. This committee was composed of representative leaders on the National Council staff which included experts from each of the departments; Camping, Engineering, Health and Safety, Activities and Special Events, and Program Resources Services. Any opinions and suggestions by the staff committee resulted in the Boy Scouting Service contacting various specialists in that given field throughout the nation. Suggested changes and amendments received from the experts in the field were then incorporated into the merit badge's requirements. The revised requirements were consequently reviewed by the Merit Badge Development Committee. If it became necessary, these revisions were shared with volunteers in the field. In some cases, if the action seemed warranted, the new requirements were tested by Scouts themselves. The revised requirements were at that time presented to three volunteer groups, the Boy Scout Committee, the Program Division Committee and finally the National Council Executive Board for final approval. This same procedure was used when eliminating or adding an entire merit badge.[1]

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[1]Peaslee, Keith K, National Council Boy Scouts of America, New Brunswick, New Jersey. Information concerning the merit badge development committee. Private communication. June 2, 1961.

Over the last fifty years merit badges have undergone not only various internal changes but also the manner in which they are obtained. The 1916 edition of Boy Scout Handbook (7, p. 37) introduced merit badges in the following manner:

> A boy who has passed all of the tenderfoot, second and first class scout requirement is now eligible to qualify for the various merit badges. Some are purposely restricted to boys living in rural communities, boys in school, and boys at work.
>
> These badges are intended to stimulate the Scout's interest in the life about him, and are given for general knowledge. The wearing of these badges does not signify that a Scout is qualified to make his living by the knowledge gained in securing the award.

Some of the points stressed in the early text when conducting Scout tests were: 1. guard against too rapid advancement, so to insure thoroughness in work, 2. that member of Courts of Honor (now called, Board of Review) and expert examiners should keep in mind that the lists of questions suggested were merely an outline of the scope of the examination and not to restrict the examination to these lists, 3. in no case should any points covered by the lists be omitted, 4. a substitute examination was allowed only when it included each of the questions specificed in the Handbook, 5. each applicant had to appear before a court of honor consisting of at least three members and satisfy them that he was entitled to receive a particular badge, and 6. the purpose of the examinations were not to secure mere

technical compliance with the requirements, but rather to ascertain the Scout's general knowledge of the subject as a result of his own application and study (7, pp. 65-66).

The formality of the procedures was evident by the editors' statements in references to the membership and conduct of the Court of Honor (Board of Review).

> In communities where a local council has not been organized, a local committee of representative men, including the superintendent or principal of schools, should be organized to conduct these tests.
>
> Whenever the members of the local court of honor are called upon to conduct an examination in any subject with which they are not familiar, they should obtain the aid of an expert in such subject to conduct the examination. The qualification of such expert should be definitely agreed upon by the court of honor in advance of his selection. His certificate is to be accepted only as evidence covering the technical point involved in the examination. This does not relieve the members of the court of honor from responsibility of further testing the Scout, and satisfying themselves as to his knowledge of the subject for which the merit badge is sought and his right to receive it in accordance with the official requirements.
>
> The local court of honor, having satisfied itself that the applicant has met the requirements for a merit badge, must submit in writing to the Court of Honor of the National Council a certificate endorsed by the expert who conducted the examination and certified to by the members of the local court of honor, showing that they had satisfactory proof that the Scout has actually passed the test, that he has personally appeared before the court of honor, and is entitled to receive the badge (7, pp. 67-68).

The procedures and regulation over the years have changed to where the merit badge of today has made the exploration of interests more adaptable to the guidance of youth. When a comparative study was conducted between the

past merit badge plan and the present program various changes were noted.

Today's regulations stated that a Second Class Scout was allowed to begin work on all but eleven of the over 100 merit badges (4, p. 7). The changed attitudes of the leaders and authors towards merit badges and advancement became evident from the more encouraging language being used. Examples of the author speaking to the Scout confirming the more recent principles were abstracted from the current Boy Scout Handbook.

> Your First Class badge shows that you have successfully followed the broad trail of Scouting. But the road goes much farther and, as a real Scout, you want to follow the trail to the end. There are more badges to be earned, more ranks to be reached--until finally, if you have the energy and ability, you succeed in reaching the top in Scout advancement and become an Eagle Scout (3, p. 356).

> In Scout advancement each boy proceeds at his own speed. Your rate of advancement depends entirely on you. In Scout advancement you are not trying to get ahead of anyone else--you try to better your own previous record. You move as far and as fast as your ambitions carries you (3, p. 356).

> In merit badge advancement you are on your own (3, p. 357).

> Many men who were once Scouts feel that their entire lives were influenced by their merit badge work.....Hundreds of doctors, engineers, forest rangers, and naturalist had their ambitions kindled while earning merit badges as Scouts (3, p. 357).

The use of the pamphlet "Boy Scout Requirements" (4) was encouraged because it contained the current selection

of badges and their requirements as well as the requirements for all Boy Scout ranks and qualifications (3, p. 358). Upon selecting a badge the Scout wished to earn, he contacted his Scoutmaster for advice, an application form, and the name of the merit badge counselor with whom he was to work (3, p. 359). An appointment was then arranged by the Scout with the counselor for a preliminary interview. During this time the acquaintance was made, the boys source of interest, previous training and experience was discussed, requirements explained, possible projects considered and suggestion made as to places to visit, sources of information and people to see (6, p. 7).

The Scout was then on his own to learn the skills, construct the projects and complete the requirements. The counselor was available for further appointments if more assistance was needed during the learning period. When the Scout considered himself qualified he arranged his final meeting with the counselor at which time oral and/or written tests were given. At the same time all materials, statements or certificates of completion, and articles or projects required were presented for inspection (3, p. 360).

Upon satisfaction of the merit badge counselor that all requirements of the merit badge were met he then signed the application to signify entitlement to the award. The signed application was returned to the local council office by the

Scoutmaster who then secured the embroidered merit badge (3, p. 360). The presentation of the award was made soon thereafter at a troop meeting or at a special program with guests present (3, p. 361).

It was noted that in the foregoing steps for acquiring a single merit badge no reference was made to a Board of Review. Here too procedural changes were made. The Board of Review (known earlier as the Court of Honor) now only met for the consideration of a Scouts qualification to the next higher rank. An application was made by the Scoutmaster to the Board of Review arranging an appearance of the Scout before the board. The members of the board were all men from the community interested in Scouting. This appearance was not a re-examination of the merit badge requirements but a questioning on what the Scout had accomplished and his service to Scouting and the community. The application for advancement was approved after all members of the board were satisified that all requirements were met. The actual presentation of the rank was then made at a public court of honor ceremony (3, p. 366).

The history of merit badges, like Scouting, originated in England. The original eight "Badges of Merit" as they were then referred to, had already increased to fourteen in one of the earliest American Boy Scout publications. The idea of special recognition to Scouts who earned any six was

in the way of sholder lines. For the Scout who gained all fourteen badges a "Silver Wolf" award was presented (1, p. 41). By 1916 the number of merit badges had increased to sixty-eight (7, p. iv). The success of the merit badge program, which has expanded to 100 subjects, can best be proven by the fact that over the fifty years of Boy Scouting more than twenty-eight million merit badges have been earned. Of these merit badges over 4.7 million were of an industrial arts nature (14, pp. 148-149).

Nicholson (11) in a study in 1941 made a critical analysis of the social and educational foundation of the Boy Scout movement. His primary concern was for the theory underlying the Boy Scout program of action as related to the theory of morality (character building), the philosophy of social improvement (citizenship), and the conception of the educative process (education).

In studying the character building process he selected the 'learning by doing' concept and grouped these bodily activity methods into the following subdivisions:

1. Spontaneous activity indulged in primarily for the good immediately discerned.
2. Activities motivated primarily by an end result clearly preceived by the Scout and accepted by him as intrinsically worth-while.

3. Activities motivated primarily by extrinsic devices, where the preceived and desired end is not integrally related to the total learning situation (11, p. 2).

He concluded his analysis of the learning by doing phase by stating that the advantages for character building of intrinsically motivated Boy Scout activity greatly outweigh the disadvantages which have been noted in connection with extrinsic motivation as it functions in the Boy Scout movement (11, p. 44). He also pointed to the fact that the Boy Scout movement, through use of the basic method of learning by doing, established many concrete learning situations which are dynamic in reality, meaningful in experience, and fullof inspiration forthe Boy Scout. He went on to say:

> Out of these concrete situations and specific conditions actively dealt with by the Scout, character values of great importance emerge and become organized into principles and ideals of living, which in turn become incorporated into the dominant life purposes of the Boy Scout. If the time, energy, executive skill, and resources now devoted to external control of standards in the Boy Scout movement were transformed into ways and means for creating learning situations where intrinsic control of standards would more fully predominate, it is our conviction that the character building power of learning by doing in the Boy Scout movement would be enhanced immeasurably. Freed from this unnecessary and unwarranted dependence upon extrinsic motivating devices, learning by doing can more effeciently than ever continue its positive influence as the foundational methods of Boy Scout character building (11, pp. 44-45).

When referring to citizenship training and its relation

to merit badges and vocational preparation of the immediate and future Boy Scout movement Dr. Nicholson made these comments:

> In an urbanized and mechanized civilization the Boy Scout movement is earnestly striving to bring an ever increasing number of boys into contact with the more natural and elemental forces of nature....He [the Boy Scout] must be socially useful from the vocational point of view....Inflexibility and immutability in the Boy Scout political philosophy is also indicated by certain of the merit badge requirements. The focal purpose of Boy Scouts citizenship training should be to enlighten the rising generation as to the actualities of technological, economic, and social changes already undergone in America and now, with an accelerated pace, still under way (11, p. 83).

He asserted that if one made a cursory examination of the Scouting subject matter it would present clear evidence that the emphasis is distinctly upon things to do, upon skill to be acquired rather than merely upon information to be learned.

Some of his observations on educational methods were presented as follows:

> If there is no intergral connection made with vital, outgoing processes of living, interaction in an educationally significant sense cannot reasonably be expected to take place between the internal and external factors in the learning process. Insofar, therefore, as this holds true in the Boy Scout adherence to stated requirements in the test passing program, the psychological unit of learning, instead of an educationally significant situation, may then be nothing more than a series of disconnected fragments of subject matter which are learned for no better reason than are required for advancement in rank or desired for an extrinsic decorative award (11, p. 100).
>
> It is possible that required Boy Scout subject matter, under the impetus of external propulsion, may

> interact with impulse and through this interaction create a purpose out of which may develop an interest which, gathering power and momentum, may subsequently move forward in fruitful interaction in an expanding world of experience. (11, p. 100).
>
> In the Boy Scout movement the decorative award rather than genuine mastery of the situation too often becomes the focus of attention. When the focus of control is thus shifted from external to internal factors, the total learning situation is almost certain to be limited (11, p. 101).

The association between Scouting and the school has been substantial from the very beginning. In 1934 Wyland (15) in a comprehensive study of the Boy Scout movement and the school said:

> "If a basis for any cooperative activity of the schools and organized Scouting exists, it will be found in the identity or overlaying of objectives, a similarity of major functions, nonconflicting guiding principles, mutually supplementary programs, and a joint responsibility to the boys of the community who participate in both programs and are entitled to the maximum benefits of their combined values."

These points also held true for the merit badge phase of Scouting.

In his study frequent references were made to the co-operation between school and the merit badge program. Quotes from school official particularly pointed out this fact. One official said, "There is a special class in each of several of the merit badge subjects." Another mentioned, "The school board has lent industrial arts equipment to the Scout organization for use in its summer camp." One superintendent was quoted as saying, "Scouting, through its

merit badge program, is providing prevocational exploration and aiding the school program of vocational and educational guidance." One school official explained their merit badge examiners program by reporting:

> One key man was selected in each of the junior and senior high schools to assume responsibility for recruiting members of the faculty as merit badge examiners. These examiners were instructed in their duties by the local Scout council and were furnished with copies of the merit badge pamphlets. Ninety-seven school teachers are now on the list of examiners, making it possible for a school boy to pass most of the merit badge tests within the school. The teachers are thorough and very much interested. The plan has been working over a period of years (15, pp. 40-41).

In a small brochure (8) on the cooperation between Scouting and the school boards Dr. Herold C. Hunt, Eliot Professor of Education at Harvard University and long-time superintendent of school in several large cities, said:

> In our concern today for the development of an adequate educational program it should be remembered that in many educational endeavors the school, the home, and the community have shared responsibilities. Nowhere is this cooperative need more evident than in the program of character building. Here the well-organized and educationally sound activities of the Boy Scouts offer opportunities unexcelled. Full utilization of these services will be enhanced by the wide use of educational facilities which interested communities will make available. I know of no greater enrichment of the school program than that which Scouting affords nor of a finer partnership on the part of all who seek the fulfillment of our youth potential.

Jackson, (10) in 1938, reported the results of a study in which he analyzed the content of ten industrial arts merit badges to determine whether the Scout projects and

practices approached the standards of teaching as demanded by the American Vocational Association. To study the relationship that existed between the industrial arts work of the public schools and the Boy Scout merit badge requirements he listed the items the American Vocational Association recommended what every boy should be able to do and know in a particular subject. He then designated the items common to both the requirements of the merit badge and the list of attainment. Upon comparison he followed with a recommendation for the addition of certain items in the shop standards that were not in the Scout tests and were not too technical or beyond the age level of the Scouts.

The conclusions of Jackson's comparison were that the disparity between the content of the Boy Scout and public school curricula was not significant but that the level of difficulty was considerably lower for the merit badge tests. It was also concluded that projects which may be used by the Scout as part of his equipment were lacking, and should therefore be developed and incorporated within the Scout program wherever possible. An insufficiency of vocational guidance information was observed within the occupational exploratory Scout tests.

His recommendations to school authorities, Scouting authorities and industrial arts teachers were made for the purpose of expanding and enriching the Scout merit badge

library and thus bring it within the level of the public school industrial arts classes.

In an earlier thesis on the merit badge program Bing (2) made the following contribution:

> Attempts to make Scouting an integral part of the school systems have not been attended with signal success. The industrial teachers were first to recognize and appreciate the connection between Scouting and school shop work.

He also observed that shop instructors agree to serve as merit badge counselors in order to raise the standards of awards. In one of his recommendations to industrial arts instructors, he suggested that they capitalize on the interest that Scouting has created by incorporating in their courses of study, more materials that will assist the boys in qualifying for merit badge awards.

Over the years certain colleges and universities have provided credit and non-credit courses for training in Scouting principles and methods. An investigation of Iowa State University's records (9) revealed that between 1926 and 1929 a course was offered in the Physical Education curriculum under Professor T. N. Metcalf which was entitled "Scouting." The particular description of the course read as follows:

> 21. Scouting. Lectures on boy psychology. Practical study of first aid, life saving, signalling, rope making, woodcraft, map making, all scout activities. Summer. Lect. 2. lab. 3 and field trips; credit 2.

In conclusion, Dr. James E. Russell, Dean of Teachers College, Columbia University, when referring to the merit badge program of the Scouting movement once said,

> I would consider myself a prince among school men, if I could devise a school program in which the curriculum should appeal so directly to a boy's interests and the courses of study apply so serviceably to adult needs. Every task in Scouting is a man's job cut down to a boy's size. The appeal to a boy's interests is not primarily because he is a boy, but particularly because he wants to be a man (1, p. 41).

METHOD OF PROCEDURE

In view of the many phases of Scouting, the subjects and geographical areas to be covered and the practical values to be served, it became apparent that the method of procedure would have to rely primarily on a descriptive research type study. A questionnaire (see Appendix B) was prepared after interviews and correspondence with local and national officials confirmed the originality of the type of study under consideration. The questionnaire was constructively criticized by college students and staff members. A trial study was conducted with the help of local Eagle Scouts.

The questionnaire with return envelop was mailed on January 3, 1961 to 725 Eagle Scouts living in Iowa at the time they received their Eagle rank. The period sampled was from January 1, 1958 to January 1, 1961. Upon cut-off date, February 28, 1961, 510 questionnaires had been returned. Of the returned questionnaires twenty-four were non-deliveries and four were incorrectly answered and destroyed. This therefore resulted in a return of 482 or 66 percent without the use of a follow-up notice.

The confidential names and addresses of the Eagle Scouts were obtained through the courtesy of the Scout Executives of each of the eleven area councils within the

State. The number of Scouts by council for each of the three years is shown in Appendix C.

The inventorial questionnaire was introduced by a cover letter directed to the Scout as an individual. The body of the inquiry was divided into four sections. The first section mainly concerned questions about the Scout himself. They were as follows: name; address, (both were insignificant and not tabulated); location of home, (city, town or rural); present occupation; age, (in years and months); grade in school; industrial arts courses taken in school, (seven choices were listed); college, (status or attitude toward enrollment); present Scouting position or office being held; total number of merit badges awarded; and the date of Eagle rank by month and year.

The second part consisted of seven lettered questions to be answered by the Scout with respect to the twenty-one merit badges alphabetically listed on a grid immediately below. Each of the questions requested the recipient to mark in the appropriate column with a check mark or number, the merit badges pertaining to his personal achievement or opinion. The questions prescribed marking: (A) those merit badges that had been earned, (if none were earned, the questionnaire was to be returned after answering questions E, F and G); (B) the order in which the badges were earned; (C) the estimated degree of difficulty of the earned badges

on a 1. "easy," 2. "medium," 3. "difficult" scale; (D) if the badge was earned alone or with another Scout; (E) the preference order of five more badges when given a equal opportunity to acquire each; (F) the five badges, of those listed, which would be the easiest to earn; and (G) the five badges which would be the most difficult to earn.

The third portion of the questionnaire consisted of a crosshatched chart placed lengthwise on the page. The Scout was asked to answer five specific questions about each industrial arts merit badge earned. Numbered alternatives including an open-end answer were given for each question. The questions and their multiple answers were as follows:

> What are your reasons for selection? interested, looked easy, school subject, my job or work, other Scout did same badge, materials and equipment available, repair work, hobby, or other ___.
>
> What information sources did you use? merit badge pamphlet, Scout Handbook, personal contact, at work or job, library, magazine, visual aids, school subject, other ____ or none.
>
> What porsonnel assisted you? Scoutmaster, industrial arts teacher, camp instructor, merit badge counselor, other Scout holding badge, specially appointed person, parents, teacher, other ____ or none.
>
> What school subjects were influential? woodworking, metalwork, electricity, mechanical drawing, crafts, art, general science, machine shop, auto mechanics, physics, other ____ or none.
>
> What difficulties did you encounter? applying for badge, getting information, personnel assistance, time required, tools and materials, passing requirements, cost, final test, other ____ or none.

The answers for a badge were placed in a marked column. One primary and any number of secondary answers were placed in the appropriate section and row. One badge was given as an example and guide. The chart was designed to accomodate twelve badges.

The last part of the questionnaire was composed of more questions about the industrial arts merit badge earned. The three short answer, open form questions asked the Scout to list the projects completed for each badge, the type of final test or review conducted and any comments or recommendations about the badge or badges in general. Again, as on the preceeding page, an example was shown and twelve equal spaces were allowed for the answers.

The validity and reliability of the questionnaire was believed to have remained high due to its brevity, the subject matter covered and the characteristics of the recipients. Reasons for possible decrease of validity and reliability were: the manner of answering questions; the directions to be followed; required turning and folding of the paper; and the inherent nature of some unrestricted type questions. Observations made during the tabulation process revealed that in certain instances, as the number of badges increased, the number of answers and comments not only decreased but also became more uniform. The degree of validity and relibility decreased from the first to the last section

or page of the questionnaire.

The information returned was tabulated onto three self constructed forms and summerized upon completion of the operation. The three forms were concerned with the Scouts' characteristics, the relationship between industrial arts merit badges and the analysis of each individual badge.

FINDINGS

Information about Iowa Eagle Scouts

In order to better understand the Boy Scouts' attitudes toward, and achievements in, the merit badge program as related to industrial arts merit badges, one should know something about the boys who benefit from this organization. Seven hundred and twenty-five Iowa Eagle Scouts as shown in Appendix C were asked information about and opinions on twenty-one merit badges. Of the 482 Scouts that replied less then 10 percent lived in rural homes. Sixty percent indicated they lived in a city while the remainder or about 31 percent of the Scouts lived in towns. The location of the Scouts' homes are shown in Table 1.

Table 1. Location of eagle scouts' homes

Location	Number	Percentage
City	288	60
Town	151	31
Rural	43	9
Total	482	100

The mean age of the Scouts who responded to the inquiry was 16.76 years. The age of the youngest and the oldest Eagle Scout during the three year period sampled was 12 years 4 months and 45 years 11 months, respectively. Thus resulted an age range of 33 years and 7 months.

Of the Scouts who reported, 96 percent were students in some type of school. They were located anywhere from the 6th grade to college seniors. The remaining 4 percent were employed in various occupations.

The distribution of Scouts by grades in school is shown in Table 2. The 10th grade had the largest percentage of Eagle Scouts with 21.6 percent. Grades 11 and 12 showed a slight decrease in the number of Eagle Scouts. At the 10th grade level a boy will have been a Scout approximately four years. The data also showed that approximately 71 percent of the Eagle Scouts were enrolled between grades 9 and 12.

While in school 80 percent of the Eagle Scouts took one or more industrial arts courses. This same 80 percent accounted for a total of 1103 courses or a mean of 2.86 courses per Scout. The mean for all Scouts sampled was 2.28 industrial arts courses per Scout. They were asked to indicate which industrial arts subjects they had taken in school. It was up to the Scout to indentify the subject as no definitions or specifications were given in the question-

Table 2. Grade placement of eagle scouts

Grade	Number	Percentage
6	1	.1
7	4	.8
8	30	6.2
9	52	10.8
10	104	21.6
11	96	19.9
12	90	18.7
Graduated	105	21.8
Total	482	100.0

naire. Table 3 contains their replies. The two subjects taken by more then half of the Scouts were woodworking and mechanical drawing. Next in frequency came the art, metalwork and electricity courses. The remaining courses except for printing were considered as various units or subjects within a course.

In order to evaluate the Eagle Scout's opinion toward post high school education each was asked if he had attended, is attending, or plans to attend college. The answers of the Scouts were tabulated in Table 4. There were 349 or 72.4 percent of the Scouts who plan to attend college in

Table 3. Industrial arts courses taken by eagle scouts

Name of course	Number of courses	Percent of 482 Scouts
Woodworking	289	60
Mechanical Drawing	266	55.3
Art	170	35.2
Metalwork	144	29.9
Electricity	99	20.6
General Crafts	71	14.7
General Shop	12	2.5
Leather and/or Plastics	11	2.3
Printing	9	1.8
Others	32	6.6
None[a]	(96)	(20)
Total	1103	

[a]Number and percent of Eagle Scouts who took no industrial arts course.

the future. The percentage of Scouts now attending a college of some type was 17.0 percent. Four percent of the Scouts did not specify their status. A total of 90.6 percent of the Scouts stated that they had attended, are attending or plan to attend college.

Table 4. Eagle scouts and college education

Classification	Number of Scouts	Percentage
Plan to attend college	349	72.4
Are attending college	82	17.0
Do not plan to attend college	26	5.4
Have attended college	6	1.2
Unknown	19	4.0
Total	482	100.0

Industrial Arts Influence on Merit Badges Earned

A Scout must have earned twenty-one merit badges as part of his requirements for Eagle rank. Of these twenty-one, ten were specifically required by title. Five other badges had to be selected from groups not containing any of the industrial arts type merit badges (4, p. 15). Deducting these fifteen badges from the required twenty-one meant that a Scout had six unrestricted choices from all remaining badges. The average number of merit badges available for each of the three years was 100 (12, 13, 14). When subtracting the fifteen required non-industrial arts type merit badges, it was found that a Scout had to select his six unrestricted badges from the remaining eighty-five badges.

The selected twenty-one industrial arts badges concerned with this study were 21.00 percent of all merit badges available and 24.70 percent of all non-required merit badges available. After attaining his Eagle rank, a Scout was free to select any of the merit badges.

The total number of merit badges awarded the 482 Scouts was 12,233. The average number of merit badges per Eagle Scout was 25.38. The minimum number of merit badges was twenty-one. The maximum number of merit badges earned by any one Scout in this study was sixty-one or forty badges over the Eagle rank requirement.

The total number of industrial arts merit badges earned by the Scouts over a three year period, as shown in Table 5, was 1,673. Each of the 482 Scouts earned an average of 3.471 industrial arts merit badges. The industrial arts merit badges constituted 13.68 percent of all merit badge earned. This percentage times the minimum number of badges, twenty-one, indicated that the average Scout would have 2.87 industrial arts badges when he received his Eagle rank. It was established that 47.81 percent of the six remaining unrestricted badges were of an industrial arts nature.

When the required fifteen badges per 482 Scouts were deducted from the total badges earned, 12,233, the amount was reduced by 7,230. The remaining 5,003 badges contained all of the industrial arts badges selected by the Scouts. The

Table 5. Scouts who earned a specific number of industrial arts merit badges

Number of industrial arts merit badges	Number of Scouts	Percent of Scouts	Total number of badges earned
0	9	1.9	0
1	62	12.9	62
2	123	25.5	246
3	94	19.5	282
4	71	14.7	284
5	57	11.8	285
6	25	5.2	150
7	14	2.9	98
8	10	2.1	80
9	5	1.0	45
10	1	0.2	10
11	8	1.7	88
12	1	0.2	12
13	0	0.0	0
14	0	0.0	0
15	1	0.2	15
16	1	0.2	16
Total	482	100.0	1,673

1,673 industrial arts merit badges earned, therefore constituted 33.44 percent of the non-required category of merit badges. The same 33.44 percent was obtained when the number of non-required badges held by the average Eagle Scout, 10.38, was divided by the average industrial arts badges per Scout, 3.471. This implied that one out of every three non-required badges was on an industrial arts nature.

The positively skewed distribution of the Scouts who earned a specific number of industrial arts merit badges is shown in Table 5. There were nine Eagle Scouts who had not earned any of the selected badges. A median of 2.50 industrial arts merit badges was determined from the distribution. A mode of two industrial arts merit badges was found among Eagle Scouts. This mode was comprised of 123 or 25.5 percent of the Scouts reporting. Thereafter, the number of Scouts decreased as the number of badges per Scout increased. The one exception to this condition were the eight Scouts who earned eleven badges each. The highest number of industrial arts badges earned by any one Scout in this study was sixteen.

Interrelationship of Industrial Arts Merit Badges

To establish a relationship between the selected merit badges a frequency comparison was employed. The frequency at which 482 Scouts earned the twenty-one different indus-

trial arts merit badges is shown in Table 6. The most frequent, Home Repairs, was earned by 85.0 percent of the Scouts questioned. Home Repairs was obtained more often than the combined total of the next three badges. The five badges most frequently earned were Home Repairs, Art, Woodcarving, Woodwork and Basketry. The five badges least earned were Farm Mechanics, Radio, Architecture, Masonry and Pottery. The Machinery and Printing, and the Masonry and Pottery merit badges occurred in equal frequencies.

A coefficient of correlation was established to compare Iowa Eagle Scouts against all Scouts nation wide on the basis of earned industrial arts merit badges. One of the paired variables was the frequency rank order of industrial arts merit badges earned by Iowa Scouts who received their Eagle ranks over a three year period. These ranking were correlated against the rankings of the same badges earned by all Scouts in the United States during the same three year period. The national totals were rounded off to the nearest thousand of badges as shown in Table 7. Using the Spearman Rank Order Method a plus .950 correlation was found.

$$P(\text{rho}) = 1 - \frac{6\Sigma D^2}{N(N^2-1)} = .950$$

D = difference between ranks = 77

N = number of paired ranks = 21

Table 6. Frequency ranking of industrial arts merit badges earned by eagle scouts

Rank	Name of the merit badge	Number earned	Percent of 482 Scouts earning each badge
1.	Home Repairs	412	85.0
2.	Art	139	28.8
3.	Woodcarving	133	27.6
4.	Woodwork	114	23.6
5.	Basketry	106	22.0
6.	Electricity	100	20.8
7.	Mechanical Drawing	96	19.9
8.	Bookbinding	70	14.5
9.	Leatherwork	63	13.1
10.	Painting	62	12.9
11.	Automobiling	57	11.8
12.	Metalwork	55	11.4
13.	Photography	47	9.8
14.	Plumbing	41	8.5
15.5	Machinery	36	7.5
15.5	Printing	36	7.5
17.	Farm Mechanics	28	5.8
18.	Radio	27	5.6
19.	Architecture	19	3.9

Table 6 (Continued)

Rank	Name of the merit badge	Number earned	Percent of 482 Scouts earning each badge
20.5.	Masonry	16	3.3
20.5.	Pottery	16	3.3
Total		1,673	

To check the validity of the coefficient the Person Product Moment Method was applied using the means of the raw scores. The following equation was employed:

$$r = \frac{Mxy - Mx \cdot My}{\sqrt{[Mx^2 - (Mx)^2]\,[My^2 - (My)^2]}}$$

Values substituted:

$Mx = 77.9524$ = Iowa totals
$My = 32.2857$ = National totals
$Mxy = 6516.1428$
$Mx^2 = 13240.8095$
$My^2 = 3397.7143$
$N = 21$

Solving the above equation a plus .974 coefficient of correlation was obtained.

The Spearman Rank Order Method was repeated to compare the rank order of the badge frequencies of this study to rank order frequencies covering a period of fifty years. The national totals for this period are shown in Table 7.

Table 7. Industrial arts merit badges earned by Iowa eagle scouts and all scouts nationally

Rank	Name of merit badge	Iowa Eagle Scout totals 1958-1960	National totals[a] 1958-1960	National totals[a] 1911-1960
1.	Home Repairs	412	238	956
2.	Art	139	51	245
3.	Woodcarving	133	57	484
4.	Woodwork	114	53	515
5.	Basketry	106	51	240
6.	Electricity	100	32	258
7.	Mechanical Drawing	96	23	134
8.	Bookbinding	70	17	327
9.	Leatherwork	63	31	125
10.	Painting	62	28	182
11.	Automobiling	57	12	173
12.	Metalwork	55	22	328
13.	Photography	47	11	113
14.	Plumbing	41	14	147
15.	Machinery	36	10	121
16.	Printing	36	19	112
17.	Farm Mechanics	28	7	84
18.	Radio	27	6	28
19.	Architecture	19	5	34
20.	Masonry	16	7	103
21.	Pottery	16	4	29
Total		1,673	678,000	4,737,000

[a]Rounded to the nearest thousand (14, pp. 148-149).

A plus .875 coefficient of correlation was obtained between the two sets of data.

All three of the foregone coefficients were above the .80 correlation. Thereby, it was considered that the correlations between the sets of data were evaluated "high to very high."

The following formula, the "Index of Forecasting Efficiency," was used to determine the probable accuracy of prediction:

$$E = 100(1 - \sqrt{1 - r^2})$$

$$E = 100(1 - \sqrt{1 - (.974)^2})$$

$$E = 77.35\%$$

This indicated that a .974 correlation provided a 77.35 percent improvement in prediction ability over a pure chance guess.

The sequence in which a Scout selected and then earned his industrial arts merit badges was considered important in this study. A method of computing was adopted whereby the order in which the merit badges earned could be evaluated. Each Scout was asked to specify the order in which he obtained the badges. A procedure that was adopted used the letter "A" to represent the position of the badge in the sequence. The letter "B" represented the total number of industrial arts badges a Scout had earned. For example, if

a Scout earned the Art merit badge second out of five industrial arts badges, the tabulation read 2-5. This ratio inferred that as the difference between the two numbers increased, the greater the preference for a badge in relation to other badges earned in the industrial arts field by that Scout. Each of the series of ratios was totaled for each of the twenty-one different badges. The summation of the "A" part of the ratio was then divided by the summation of the "B" part. The resulting answer was subtracted from 1.00 in order to place the index in a positive percentage. The resulting "completion-preference" index symbolized the order in which a particular merit badge was obtained over all other industrial arts merit badges earned by the Scouts questioned. The ranking of the indexs for each of the twenty-one merit badges appears in Table 8. The order in which the badges were arranged exemplified the sequence order an average Scout would prefer and complete all twenty-one badges.

The Art merit badges ranked first over all other badges. This was followed by the Bookbinding, Home Repairs, Basketry, Pottery and Mechanical Drawing badges. The six merit badges, Plumbing, Radio, Photography, Printing, Architecture and Automobiling were completed last by the Scouts as indicated by the completion-preference index.

Table 8. Order of completion of industrial arts merit badges

Rank	Name of merit badge	Completion-preference index
1.	Art	53.2
2.	Bookbinding	53.1
3.	Home Repairs	49.1
4.	Basketry	46.9
5.	Pottery	45.9
6.	Mechanical Drawing	43.6
7.	Woodwork	43.4
8.	Metalwork	39.5
9.	Leatherwork	37.5
10.	Woodcarving	36.6
11.	Masonry	36.5
12.	Machinery	36.0
13.	Farm Mechanics	33.3
14.	Electricity	32.4
15.	Painting	31.7
16.	Plumbing	30.5
17.	Radio	29.0
18.	Photography	26.6
19.	Printing	26.1
20.	Architecture	25.4
21.	Automobiling	12.4

After a Scout completed the requirements for a particular merit badge he was better qualified to evaluate the badge against his abilities and against other merit badges he had earned. The results of an inquiry on the degree of difficulty of those badges earned are presented in Table 9. The Scout was asked to evaluate each earned badge on a 1. "easy," 2. "medium" or 3. "difficult" scale. A total value for each badge was obtained by multiplying each evaluation by the number of responses and adding these three values. To establish a common reference or index the total value was then divided by the frequency of the badge. This resulted in a difficulty index whereby the larger the index the more difficult was the badge earned. The responding percentages shown in Table 9 represent the percentage of Scouts responding on the basis of each badge's frequency.

The results revealed that the five most difficult industrial arts type merit badges as evaluated by the Scouts who earned them were: Radio, Architecture, Masonry, Photography and Mechanical Drawing. The five badges least difficult to obtain by the Scouts were: Basketry, Home Repairs, Art, Bookbinding and Woodcarving. In some instances only a slight difference in difficulty was found between badges. Two such examples were between the Machinery, Woodwork and Metalwork, and between Art, Home Repairs and Basketry merit badges.

Table 9. Degree of difficulty of industrial arts merit badges as assigned by scouts obtaining same

Rank	Name of merit badge	Responding percentages			Difficulty index
		Easy	Medium	Difficult	
1.	Radio	18.5	40.7	40.7	2.22
2.	Architecture	21.1	36.9	42.0	2.21
3.	Masonry	18.7	43.7	37.6	2.19
4.	Photography	14.8	63.9	21.3	2.06
5.	Mechanical Drawing	20.8	50.0	29.2	2.04
6.	Electricity	27.0	46.0	28.0	2.03
7.	Plumbing	17.1	65.8	17.1	2.00
8.	Printing	30.6	47.2	22.2	1.92
9.	Machinery	22.2	66.7	11.1	1.89
10.	Woodwork	28.9	54.4	16.7	1.88
11.	Metalwork	27.2	58.2	14.6	1.87
12.	Pottery	37.5	50.0	12.5	1.75
13.	Farm Mechanics	35.7	57.1	7.2	1.71
14.	Leatherwork	39.7	52.4	7.9	1.682
15.	Painting	40.3	51.6	8.1	1.677
16.	Automobiling	47.4	47.4	5.2	1.58
17.	Woodcarving	50.4	42.1	7.5	1.57
18.	Bookbinding	57.1	35.7	7.2	1.50
19.	Art	59.7	37.4	2.9	1.432
20.	Home Repairs	61.4	34.2	4.4	1.429
21.	Basketry	66.0	26.4	7.6	1.415

The merit badge plan was organized mainly as an individual method of exploration into various fields of knowledge and skills. In some instances joint merit badge work was encouraged not only from the standpoint of the Scout but also their leaders. Some of reasons for greater consolidation were better use of time, equipment, facilities and available instructors. Even though Scouts did work

together on one badge or requirement each Scout was still required to pass each requirement individually.

In order to verify the percentage of badges earned individually, the Scouts were asked to identify each badge earned in either of two manners. The Scouts were asked if they worked on the badge by themselves or with another Scout earning the same badge. The answers to the inquiry for each of the twenty-one merit badges are displayed in Table 10. The four merit badges which received the highest individual attention were Farm Mechanics, Home Repairs, Art and Painting. Masonry, Plumbing, Bookbinding, Pottery and Printing were the five merit badges most frequently worked on simultaneously by two or more Scouts. The mean percentage of all industrial arts merit badges worked alone by the Scouts was 72.05 or nearly three out of every four badges.

In order to investigate the merit badges more thoroughly it was necessary to survey the Scouts' opinion of badges not yet earned, like badges secured, badges desired revealed tendencies of the Scouts' general interest patterns. The merit badge preference survey was accomplished by asking each Scout to designate, in order, five unearned merit badges he would prefer to earn if given an equal chance at unearned badges. As a result of such a question the choices of all Scouts are displayed in Table 11.

Table 10. Percent of scouts who obtained each industrial arts merit badge individually

Rank	Name of merit badge	Percentage earned individually
1.5	Farm Mechanics	93
1.5	Home Repairs	93
3.5	Art	85
3.5	Painting	85
6.	Architecture	79
6.	Mechanical Drawing	79
6.	Woodwork	79
8.	Metalwork	76
10.	Automobiling	74
10.	Radio	74
10.	Woodcarving	74
12.5	Machinery	72
12.5	Photography	72
14.	Basketry	70
15.	Leatherwork	68
16.	Electricity	65
17.	Printing	64
18.	Pottery	56
19.	Bookbinding	54
20.	Plumbing	51
21.	Masonry	50
Average		72.05

The five choices by each Scout were tabulated. The totals for each badge were multiplied by an assigned value inverse of the selection order. The total value for each badge was divided by 482, the number of Scouts. The resulting index was a relative measure of preference per Scout.

Table 11. Preference for unearned industrial arts merit badges

Rank	Name of merit badge	Total Preference	Preference index per Scout
1.	Automobiling	914	1.899
2.	Photography	726	1.509
3.	Electricity	704	1.461
4.	Radio	677	1.406
5.	Architecture	628	1.325
6.	Mechanical Drawing	600	1.246
7.	Machinery	322	.669
8.	Art	284	.589
9.	Woodwork	246	.511
10.	Leatherwork	244	.506
11.	Metalwork	239	.496
12.	Painting	225	.467
13.	Woodcarving	207	.430
14.	Basketry	158	.390
15.	Printing	144	.299
16.	Farm Mechanics	111	.231
17.	Masonry	108	.224
18.	Bookbinding	105	.218
19.	Plumbing	93	.193
20.	Home Repairs	69	.141
21.	Pottery	42	.087

The six most preferred merit badges in the order of their preference were Automobiling, Photography, Electricity, Radio, Architecture and Mechanical Drawing. A near 50 percent decrease in preference occurred between Mechanical Drawing and Machinery, the next preferred badge. The six least preferred badges included the Pottery, Home Repairs, Plumbing, Bookbinding, Masonry and Farm Mechanics merit badges.

Each merit badge required a Scout to attain certain knowledge and skills about the subject selected. The requirements varied in length and difficulty both between and within merit badges. This situation inadvertently brought about still another system of merit badge classification on the basis of the Scout's ability to pass the requirements. To confirm such an arrangement a rating system was established. This was accomplished by asking the Scouts to select five of the twenty-one merit badges which they considered to be the easiest to acquire. Their opinions are presented in Table 12. Basketry and Home Repairs, first and second respectively were selected by over 50 percent of the Scouts as being the easiest badges. The next four badges were the Bookbinding, Woodcarving, Art and Painting merit badges. The last six badges among those badges rated easiest were the Machinery, Metalwork, Farm Mechanics, Masonry, Architecture and Radio merit badges.

Table 12. Industrial arts merit badges easiest to obtain

Rank	Name of merit badge	With five choices	
		Number of responses	Percent of 482 Scouts selecting each badge
1.	Basketry	268	55.6
2.	Home Repairs	248	51.5
3.	Bookbinding	238	49.4
4.	Woodcarving	189	39.2
5.	Art	186	38.6
6.	Painting	170	35.3
7.	Automobiling	142	29.4
8.	Leatherwork	115	23.8
9.	Woodwork	106	22.0
10.	Pottery	82	17.0
11.	Electricity	74	15.4
12.	Mechanical Drawing	62	12.9
13.	Plumbing	60	12.5
14.	Photography	58	12.0
15.	Printing	52	10.8
16.	Machinery	41	8.5
17.	Metalwork	40	8.3
18.	Farm Mechanics	38	7.9
19.	Masonry	26	5.4
20.	Architecture	25	5.2
21.	Radio	20	4.2

Each Scout has next asked to designate the five badges which he considered to be the most difficult to earn. This question was also used to cross-examine the Scouts' opinions on the preceding question. The tabulated answers were computed by percentages on the basis of 482 Scouts. The opinions expressed by the Scouts concerning difficult merit badges are shown in Table 13.

Table 13. Industrial arts merit badges most difficult to obtain

Rank	Name of merit badge	With five choices	
		Number of responses	Percent of 482 Scouts selecting each badge
1.	Radio	312	64.8
2.	Architecture	297	61.6
3.	Electricity	208	43.2
4.	Machinery	161	33.4
5.	Farm Mechanics	160	33.2
6.	Masonry	146	30.3
7.	Photography	145	30.1
8.	Mechanical Drawing	128	26.6
9.	Metalwork	114	23.6
10.	Printing	99	20.6
11.	Plumbing	80	16.6
12.	Art	74	15.4
13.	Automobiling	69	14.3
14.	Pottery	60	12.5
15.	Woodwork	52	10.8
16.	Woodcarving	41	8.5
17.	Leatherwork	38	7.9
18.	Painting	34	7.1
19.	Bookbinding	21	4.4
20.	Basketry	17	3.5
21.	Home Repairs	4	0.1

The array of the most difficult industrial arts merit badges began with the Radio, Architecture, Electricity, Machinery, Farm Mechanics and Masonry merit badges. The last six badges on the most difficult scale were the Woodcarving, Leatherwork, Painting, Bookbinding, Basketry and Home Repairs merit badges.

To more clearly present the relationships existing between the twenty-one industrial arts merit badges, the rankings of the seven variable characteristics were collected from Tables 6 and Tables 8 through 13 and shown in Table 14. The following abbreviations were used with the table: Architecture - Arch, Art - Art, Automobiling - Auto, Basketry - Bskty, Bookbinding - Bookbd, Electricity - Elect, Farm Mechanics - F Mech, Masonry - Mason, Mechanical Drawing - Mech Dr, Metalwork - Metal, Painting - Paint, Photography - Photo, Plumbing - Plumb, Pottery - Pot, Printing - Print, Radio - Radio, Woodcarving - Woodcar, Woodwork - Woodwk.

The Spearman Rank Order Method was applied to each of the possible twenty-one combinations of the seven characteristics in Table 14. The resulting coefficients of correlation for these variables are charted in Table 15.

A substantial relationship occurred between the frequency at which the badges were earned, the degree of difficulty of the earned badges, the badges evaluated as easiest and the badges evaluated as the most difficult. The frequency correlated lowest with the preference for the badges with a plus .180 coefficient.

The interrelations between the order in which badges were obtained and all other criteria correlated moderately with one exception. A negligible relationship appeared

Table 14. Composite ranking of certain characteristics of industrial arts merit badges

	Frequency distribution	Order of completion	Degree of difficulty	Worked alone	Preference order	Easiest badge	Most difficult badge
	A	B	C	D	E	F	G
1.	H Rep	Art	Radio	F Mech[a]	Auto	Bskty	Radio
2.	Art	Bookbd	Arch	H Rep[a]	Photo	H Rep	Arch
3.	Woodcar	H Rep	Mason	Art[b]	Elect	Bookbd	Elect
4.	Woodwk	Bskty	Photo	Paint[b]	Radio	Woodcar	Mach
5.	Bskty	Pot	Mech Dr	Arch[c]	Arch	Art	F Mech
6.	Elect	Mech Dr	Elect	Mech Dr[c]	Mech Dr	Paint	Mason
7.	Mech Dr	Woodwk	Plumb	Woodwk[c]	Mach	Auto	Photo
8.	Bookbd	Metal	Print	Metal	Art	Leather	Mech Dr
9.	Leather	Leather	Mach	Auto[d]	Woodwk	Woodwk	Metal
10.	Paint	Woodcar	Woodwk	Radio[d]	Leather	Pot	Print
11.	Auto	Mason	Metal	Woodcar[d]	Metal	Elect	Plumb
12.	Metal	Mach	Pot	Mach[e]	Paint	Mech Dr	Art
13.	Photo	F Mech	F Mech	Photo[e]	Woodcar	Plumb	Auto
14.	Plumb	Elect	Leather	Bskty	Bskty	Photo	Pot
15.	Mach[f]	Paint	Paint	Leather	Print	Print	Woodwk
16.	Print[f]	Plumb	Auto	Elect	F Mech	Mach	Woodcar
17.	F Mech	Radio	Woodcar	Print	Mason	Metal	Leather
18.	Radio	Photo	Bookbd	Pot	Bookbd	F Mech	Paint
19.	Arch	Print	Art	Bookbd	Plumb	Mason	Bookbd
20.	Mason[g]	Arch	H Rep	Plumb	H Rep	Arch	Bskty
21.	Pot[g]	Auto	Bskty	Mason	Pot	Radio	H Rep

[a]Tied for 1.5.

[b]Tied for 3.5.

[c]Tied for 6.

[d]Tied for 10.

[e]Tied for 12.5.

[f]Tied for 15.5.

[g]Tied for 20.5.

between the order of completion and the working alone of the badges. The degree of difficulty experienced by the Scouts who earned the badges correlated a high negative .861 with the opinion of all Scouts who evaluated the merit badges on being easy to earn. At the same time, a high positive correlation of .838 resulted with the ranking of the evaluation of the most difficult to earn badges.

The coefficients of correlation between the criterion on whether a Scout worked on the badge alone and all other criteria remained below a .324 in all cases. A coefficient difference of .146 was noted between the worked alone quality and any of the three difficulty evaluation qualities.

The preference of the Scouts for the more difficult merit badges was evidenced by the minus .460 correlation with the order of completion and a plus .501 with the most difficult array. All other coefficients were lower with the least significant being a minus .140 with the easiest to obtain array of badges.

The coefficients of correlation between the easiest and most difficult industrial arts merit badges remained steady for all variables with the exception of the preference category which varied from a minus .140 to a plus .501. The highest correlation, a minus .895 resulted between the relationship of the badges when ranked according to the easy and difficult distributions.

Table 15. Intercorrelations of seven variable merit badge characteristics[a]

	A	B	C	D	E	F	G
A	--	.544	-.637	.324	.180	.779	-.605
B	--	--	-.586	.098	-.460	.573	-.555
C	--	--	--	-.235	.329	-.861	.838
D	--	--	--	--	.250	.089	-.013
E	--	--	--	--	--	-.140	.501
F	--	--	--	--	--	--	-.895
G	--	--	--	--	--	--	--

[a]A = Frequency - high to low.
B = Order of completion - first to last.
C = Degree of difficulty - difficult to easy.
D = Worked alone - high to low.
E = Preference - first to last.
F = Easiest - most to least.
G = Difficult - most to least.

Analysis of Individual Industrial Arts Merit Badges

To better understand the industrial arts merit badges and the Scouts who earned them, each of the twenty-one badges was analyzed from five different standpoints. The Scouts' primary and secondary responses to each of the answers to the five questions are shown in Tables 16 through 22. The number of primary responses for each answer was concerted into a percentage of the total primary responses

for each question. The same process was repeated for the secondary responses using the secondary totals for each question. The total number of Scouts responding to each question is shown in parentheses at the bottom of each primary and secondary responses column. A response value was computed in order to rank the significance of the answers to the questions. The symbols "V" and "R" were used to identify the "Value" and "Rank Order" columns in the tables. The values, as shown in Tables 16 through 22, are equal to two times the number of primary responses plus the number of secondary responses. The conversion of percentages to value was accomplished by application of the following equation:

$$V = (\%P)(2TP) + (\%S)(TS)$$

In Table 16, the results of the Architecture, Art and Automobiling merit badges are presented. The main reason Scouts selected to earn the Architecture badge was because they were interested in the subject. Information for this subject was obtained primarily from the library, the merit badge pamphlet and from subjects taken in school. The industrial arts teacher and the merit badge counselor assisted the Scouts more than any other individuals in earning the badge. The school subject that most influenced Architecture was mechanical drawing. Two other subjects of less importance which played a part were general science and art.

Forty-seven percent of the Scouts reported that no difficulties were encountered in earning the badge. The Scouts that did encounter some difficulties indicated that the time required for the badge and acquiring information about the subject were the two main concerns.

The project most favored for this badge was a design for a house. The final test was mainly oral in nature and the displaying of the drawing made. Summarizing the Scouts' comments it appeared that the badge was more interesting and much easier than expected, but that assistance was required in most cases.

The Art merit badge was primarily selected because of the Scouts' interest. The fact that art was a school subject and that it appeared an easy badge to acquire also played a part in the Scouts' selection. The merit badge pamphlet ranked first over all other sources of information used by the Scouts. The influence school played upon the Art merit badge was evidenced by ranking art first among influential school subjects, teachers first among persons assisting the boys and school second among sources of information. Parents were next to teachers in helping the Scouts with their Art badge. The only difficulty encountered and ranking second was the time involved to complete the requirements.

The projects for the Art badge were of three general

types, ink, pencil or charcoal and paint. The subjects painted concerned Scouting objects and scenes. The final tests were decisively oral in nature and included displaying the sketches to the counselor. The majority of the comments were that the badge was easy, but that the art teacher should be consulted for assistance.

The Automobiling merit badge was primarily selected by the Scouts because they were interested in the subject, and secondly because it was a subject offered in school. The school's influence was also evident when the main information source was the driver education course. The Automobiling merit badge pamphlet and the Scouts' personal contacts played a major part in providing information for this badge. The main source of assistance received by the Scouts came from the teacher in school and secondly from the parents. The only school subject that had any appreciable influence upon the Automobiling badge was driver training. Most of the Scouts reported no difficulty in obtaining the badge except for the 22 percent who stated that too much time was required.

The project and the final test for the Automobiling badge were in most cases the same, namily that of passing the driver training course in school. About half of the final tests were of the written type. The major comment made by fifty-eight Scouts earning the badge was the advantage

Table 16. Analysis of the architecture, art and automobiling merit badges[a]

	Architecture				Art				Automobiling			
	%P	%S	V	R	%P	%S	V	R	%P	%S	V	R
Selection reasons:												
1. Interested	79	11	33	1	28	17	117	1	43	17	66	1
2. Looked easy	11	07	6	4.5	25	18	84	3	05	17	22	4
3. School subject	05	14	6	4.5	26	20	90	2	41	09	56	2
4. Job or work	05	04	3	6	00	00	1	8	00	04	4	8
5. Other Scout did same badge	00	07	2	7.5	02	09	27	6	02	08	9	6
6. Materials and equip. available	00	25	7	2.5	09	23	47	4	03	30	32	3
7. Repair work	00	00	0	9	00	00	0	9	00	00	0	9
8. Hobby	00	25	7	2.5	10	11	39	5	02	10	11	5
9. (Other)	00	07	2	7.5	00	02	5	7	03	04	8	7
Total responding	(19)	(28)			(133)	(255)			(58)	(92)		
Information sources:												
1. Merit badge pamphlet	31	14	16	2	46	12	149	1	24	17	41	2
2. Scout Handbook	00	21	6	5	11	14	59	4	05	17	19	4
3. Personal contact	16	07	8	4	15	17	76	3	12	27	35	3
4. Work or job	05	00	2	7	00	00	0	9.5	00	05	4	8
5. Library	26	29	18	1	02	10	26	6	00	06	5	7
6. Magazine	00	11	3	6	01	06	14	7	00	01	1	10
7. Visual aids	00	04	1	8	01	14	31	5	02	15	14	5
8. School subjects	21	14	12	3	23	25	115	2	50	09	65	1
9. (Other)	00	00	0	9.5	00	02	5	8	05	03	8	6
10. None	00	00	0	9.5	00	00	0	9.5	02	00	2	9
Total responding	(19)	(28)			(133)	(209)			(58)	(78)		
Personnel assisting:												
1. Scoutmaster	11	06	3	6	01	08	11	7.5	12	08	17	4
2. Ind. Arts teach.	31	12	14	1	12	08	39	4	00	03	1	9
3. Camp instructor	00	06	1	8.5	01	03	7	9	00	00	0	10
4. Merit badge counselor	21	24	12	2	14	17	43	3	14	21	24	3
5. Other Scout holding badge	00	06	1	8.5	03	12	19	6	02	03	3	7
6. Specially appointed person	00	06	1	8.5	03	03	11	7.5	03	10	4	5
7. Parents	05	24	6	4.5	07	32	48	2	20	32	36	2
8. Teacher	16	12	8	3	46	15	136	1	45	18	59	1
9. (Other)	00	06	1	8.5	01	02	6	10	02	05	4	6
10. None	16	00	6	4.5	11	00	30	5	02	00	2	8
Total responding	(19)	(17)			(133)	(93)			(58)	(38)		
Influential subjects:												
1. Woodworking	05	11	3	5	00	10	2	6	00	00	0	9.5
2. Metalwork	00	11	1	8	00	05	1	7.5	00	00	0	9.5
3. Electricity	00	00	0	10.5	00	00	0	10.5	00	00	0	9.5
4. Mechanical Draw.	42	11	17	1	02	25	11	3	00	00	0	9.5
5. Crafts	00	00	0	10.5	01	30	7	4	00	00	0	9.5
6. Art	05	44	6	3.5	89	00	118	1	00	00	0	9.5
7. General Science	16	00	6	3.5	00	25	5	5	00	33	3	5
8. Machine Shop	00	00	0	10.5	00	00	0	10.5	00	23	2	6
9. Auto Mechanics	00	00	0	10.5	00	00	0	10.5	09	00	10	3
10. Physics	00	22	2	6.5	00	00	0	10.5	03	33	7	4
11. (Other)	05	00	2	6.5	00	05	1	7.5	53	11	63	1
12. None	26	00	10	2	08	00	22	2	34	00	40	2
Total responding	(19)	(9)			(133)	(20)			(58)	(9)		
Difficulties encountered:												
1. Applying for badge	00	00	0	9	02	03	7	8.5	02	10	3	6
2. Getting information	11	67	6	3	09	17	32	3	00	00	0	9.5
3. Personnel assisting	05	00	2	5	06	17	22	5	00	30	3	6
4. Time required	26	00	10	2	20	17	58	2	22	10	27	2
5. Tools, materials	05	00	2	5	03	17	14	6	03	20	6	3
6. Passing requirements	05	00	2	5	08	09	25	4	02	10	3	6
7. Cost	00	00	0	9	01	00	2	10	00	00	0	9.5
8. Final test	00	33	1	7	01	14	7	8.5	02	10	3	6
9. (Other)	00	00	0	9	02	06	8	7	02	10	3	6
10. None	47	00	18	1	47	00	126	1	67	00	81	1
Total responding	(19)	(3)			(133)	(35)			(58)	(10)		

[a]The following column heads indicate:
%P = Percent Primary.
%S = Percent Secondary.
V = Value.
R = Rank Order.

of having taken the driver training course in high school.

The analysis of the Basketry, Bookbinding and Electricity merit badges are presented in Table 17. More Scouts elected to earn the Basketry merit badge because it looked easy than for any other reason. The second and third most important reasons were because materials and equipment were available and because they were interested in the subject. The information about basketry came mainly from the available merit badge pamphlet and secondly through contact with people who had previous knowledge and experience with basketry. Visual aids were made of some use by the Scouts in passing the requirements for this badge. The camp instructor assisted the Scouts more than any other person. The merit badge counselor, the Scoutmaster and the parents all contributed about equally in helping the boys with their projects. The two school subjects which showed a slight influence on Basketry were crafts and art. The length of time required for qualifying for the badge's requirements was the greatest difficulty encountered by the Scouts.

The projects for this badge fell into two general groups, that of weaving a large basket or tray and weaving a seat of a stool or chair. All final tests were of the oral type explaining how the projects were constructed. The generalized comments were that the badge was easy, but assistance is needed which can best be obtained at Scout

camp.

The first four reasons why the Scouts selected to earn the Bookbinding merit badge were because it looked easy, there was material and equipment available, they were interested in bookbinding and because another Scout worked the same badge. Most of the information on bookbinding came from a specialist through personal contact and then from the merit badge pamphlet. The specially appointed person who helped the Scout was either the librarian or a printer. The merit badge counselor also played an important part in assisting the Scouts. The teachers, Scoutmasters and parents all provided minor adult assistance. Crafts courses in school had a moderate influence on Bookbinding. Over half of the Scouts did not experience any great difficulty from this subject. Those Scouts who had trouble, reported that available time and materials were the two most often encountered.

The projects reported by the Scouts were limited to scrapbooks and the binding or rebinding of books. Oral type tests were administered along with the display of the projects completed. The comments made by the Scouts fell into categories of easy to obtain, see the librarian for help, useful and interesting.

The main reason the Electricity badge was chosen by the advancing Scouts was their interest in this topic. The

fact that electricity was a subject in school and that materials and equipment were available also induced the Scout to acquire this merit badge. Knowledge about electricity was mainly gained by studying the special pamphlet published for the badge. Various school subjects concerned with electricity made their influence felt upon this badge. The three most predominant subjects were electricity itself, general science and physics. Contact with persons who were specialists in this field was another frequently used information source. The various people who assisted the Scouts most with the requirements were ranked in the following order: the merit badge counselor, the parents, the industrial arts teacher, the Scoutmaster, the teacher and some specially appointed person. The difficulties encountered by the Scouts with this badge were concerned with the time required, passing the requirements and obtaining tools and materials with which to do the work.

The projects constructed for this badge were mainly small motors and electromagnets. The final review was conducted in an oral manner for the majority of the Scouts. Some of the more frequent comments made by the Scouts about the Electricity badge were: that it was interesting and important, that a good counselor or teacher is needed to help explain some of the points, and that the school performs a major role in providing assistance.

Table 17. Analysis of the basketry, bookbinding and electricity merit badges[a]

	Basketry				Bookbinding				Electricity			
	%P	%S	V	R	%P	%S	V	R	%P	%S	V	R
Selection reasons:												
1. Interested	20	16	66	3	19	16	42	3	49	20	118	1
2. Looked easy	47	20	114	1	31	16	59	1	04	06	19	7
3. School subject	01	01	4	8	04	05	11	6	23	11	67	2
4. Job or work	00	00	0	9	01	00	2	9	02	02	8	8.5
5. Other Scout did same badge	04	16	35	4	15	14	35	4	09	07	30	5
6. Materials and equip. available	22	31	94	2	16	26	50	2	03	28	58	3
7. Repair work	00	05	8	7	09	17	29	5	02	12	26	6
8. Hobby	04	06	18	5	01	02	4	8	06	11	33	4
9. (Other)	02	05	12	6	03	04	8	7	01	03	8	8.5
Total responding	(100)	(163)			(68)	(106)			(99)	(186)		
Information sources:												
1. Merit badge pamphlet	52	14	121	1	34	09	54	2	42	16	90	1
2. Scout Handbook	09	17	39	4	10	09	22	4	05	08	22	5
3. Personal contact	26	23	81	2	35	29	73	1	24	25	52	3
4. Work or job	01	00	2	10	00	05	4	7	02	04	10	8
5. Library	00	07	9	6	13	20	35	3	05	08	22	5
6. Magazine	03	09	17	5	00	03	3	8	02	04	11	7
7. Visual aids	06	23	41	3	02	19	18	5	00	14	22	5
8. School subjects	00	03	4	8.5	04	03	9	6	17	20	67	2
9. (Other)	01	03	6	7	00	02	2	9.5	02	01	6	9
10. None	02	00	4	8.5	02	00	2	9.5	02	00	4	10
Total responding	(100)	(124)			(68)	(86)			(99)	(159)		
Personnel assisting:												
1. Scoutmaster	12	10	31	4	15	12	25	4	13	13	36	4
2. Ind. Arts teach.	02	01	5	9	00	04	2	9	15	13	40	3
3. Camp instructor	41	16	93	1	00	00	0	10	00	03	2	10
4. Merit badge counselor	12	22	39	2	24	28	32	2	23	18	59	1
5. Other Scout holding badge	02	23	20	5.5	01	04	4	8	01	12	11	9
6. Specially appointed person	06	06	16	7	19	16	33	1	09	08	34	6
7. Parents	12	13	33	3	13	16	25	4	14	15	43	2
8. Teacher	03	04	9	8	15	12	25	4	14	09	35	5
9. (Other)	00	04	3	10	09	07	15	6	03	08	12	8
10. None	10	00	20	5.5	04	00	6	7	07	00	14	7
Total responding	(100)	(69)			(68)	(43)			(99)	(74)		
Influential subjects:												
1. Woodworking	00	20	1	5.5	00	22	2	6.5	00	00	0	11.5
2. Metalwork	00	20	1	5.5	00	33	3	5	00	08	4	5.5
3. Electricity	00	00	0	9.5	00	00	0	10.5	42	12	90	1
4. Mechanical Draw.	00	00	0	9.5	00	00	0	10.5	00	08	4	5.5
5. Crafts	23	00	46	2	13	22	20	2	00	04	2	7
6. Art	11	60	25	3	07	11	11	3	00	00	0	11.5
7. General Science	00	00	0	9.5	00	00	0	10.5	36	33	89	2
8. Machine Shop	00	00	0	9.5	00	11	1	8	00	02	1	9
9. Auto Mechanics	00	00	0	9.5	00	00	0	10.5	00	02	1	9
10. Physics	02	00	4	4	03	00	4	4	07	29	29	3
11. (Other)	00	00	0	9.5	02	00	2	6.5	00	02	1	9
12. None	64	00	128	1	75	00	102	1	14	00	28	4
Total responding	(100)	(5)			(68)	(9)			(99)	(51)		
Difficulties encountered:												
1. Applying for badge	02	00	4	8	06	00	08	6	05	05	12	8
2. Getting information	04	20	18	4	04	30	12	5	06	16	18	5
3. Personnel assisting	02	16	12	6	07	20	14	4	04	19	15	7
4. Time required	32	14	71	2	13	10	20	2	19	13	43	2
5. Tools, materials	11	19	31	3	12	15	19	3	10	08	23	4
6. Passing requirements	01	02	3	9	00	15	3	7	10	11	24	3
7. Cost	03	22	17	5	00	05	1	9.5	02	11	8	9
8. Final test	00	02	1	10	02	00	2	8	06	14	17	6
9. (Other)	02	04	6	7	00	05	1	9.5	00	03	1	10
10. None	43	00	86	1	56	00	76	1	37	00	74	1
Total responding	(100)	(49)			(68)	(20)			(99)	(37)		

[a]Column head symbols are explained in Table 16.

Table 18 indicates the Scouts' responses to questions concerning the Farm Mechanics, Home Repair and Leatherwork merit badges. The majority of the Scouts who procured the Farm Mechanics merit badge did so for reasons of interest, simplicity, availability of tools and materials, and because it was their work or job. Most of the information needed by the Scouts came from the Farm Mechanics merit badge pamphlet. The Scouts also signified that their contact with other people and farm work itself provided the two next best sources of information and training. The parents of the Scouts played the major role in instructing the boys on farm mechanics. The merit badge counselor ranked second in helping the youths with their badge requirements. Fifty-two percent specified that no school course had any influence on farm mechanics. The remainder of the Scouts designated machine shop, metalwork, vocational agriculture and auto mechanics as courses that had some carry-over to this badge. The only moderate difficulties expressed were in time required to do the work and the lack of personnel available for assistance.

The projects for the Farm Mechanics merit badge varied with each Scout reporting. All final tests were of the oral explanatory type. All but two of the twenty-seven Scouts lived or worked on a farm.

Home Repairs was the most frequent badge earned by the

Scouts. The two main reasons they picked Home Repairs were because of repair work about the house and because the badge looked rather easy to obtain. The fact that equipment and materials were available and that the Scouts were interested played lesser but moderate roles in the reasons for selection. The three referral sources most used by the Scouts were the particular merit badge pamphlet on home repairs, personal contact with a second party and the Scout Handbook (3). The Scouts' parents were by far the most important outside help the Scouts received. The merit badge counselor had a moderate influence in the assisting of the Scout with this merit badge. Out of the 410 Scouts who earned the badge 259 or 63 percent stated that no particular school course had any influence on this badge. Of the remaining 37 percent, 18 percent or half stated that woodworking had a primary influence on the badge. When asked what difficulties they encountered 63 percent replied that they had no trouble at all. Those Scouts that did have trouble signified that the time required to pass the requirements and the availability of tools and materials were the major hindrances.

In order to qualify each Scout completed at least fourteen of the twenty-six suggested repair items found about the home. The final reviews were conducted orally and included the demonstrating, displaying and explaining of the

procedures used. In several cases a certificate from the parents was accepted as evidence of the completed repair projects. The comments by the Scouts varied but concerned such summarized points as: easy, should be made more difficult and modernized, useful knowledge, care and safety important, a good beginning badge, and follow-up inspection necessary.

Table 18 further indicated that the Scouts' primary reason for choosing the Leatherwork merit badge were their interest in the subject. The fact that materials and equipment were available in association with the school course on leather also attributed to the selection of this badge. To obtain information about leatherwork the Scouts made personal contacts, used the merit badge pamphlet and took school courses in that order of importance. The merit badge counselor, the industrial arts teacher and the camp instructor were the three who assisted the Scouts most with their requirements and problems. The crafts and art courses were the only courses that showed any influence on leatherwork. The major difficulties expressed by the Scouts in leatherwork were that it required considerable time to complete and the cost and availability of the tools and materials.

The leather projects submitted covered a variety of small personal items such as, billfolds, purses, combcases,

Table 18. Analysis of the farm mechanics, home repairs and leatherwork Merit Badges[a]

	Farm mechanics				Home repairs				Leatherwork			
	%P	%S	V	R	%P	%S	V	R	%P	%S	V	R
Selection reasons:												
1. Interested	15	29	22	1	12	15	199	4	39	20	72	1
2. Looked easy	26	14	21	2.5	38	17	416	2	10	14	28	4
3. School subject	04	02	3	8	00	01	6	9	20	05	42	3
4. Job or work	22	10	17	4	01	05	40	7	00	01	1	8.5
5. Other Scout did same badge	07	04	6	6	04	09	90	5	10	12	25	6
6. Materials and equip. available	19	22	21	2.5	06	26	214	3	11	31	48	2
7. Repair work	07	10	9	5	33	24	425	1	00	01	1	8.5
8. Hobby	00	00	0	9	01	03	23	8	08	14	26	5
9. (Other)	00	08	4	7	05	02	47	6	02	02	4	7
Total responding	(27)	(49)			(410)	(652)			(63)	(111)		
Information sources:												
1. Merit badge pamphlet	40	18	27	1	34	09	308	1	34	16	59	12
2. Scout Handbook	07	21	10	4	23	22	262	3	14	07	25	4
3. Personal contact	22	18	17	2	23	30	293	2	27	28	60	1
4. Work or job	19	21	16	3	03	08	49	6	03	03	7	8
5. Library	00	04	1	8.5	00	02	7	10	02	06	8	7
6. Magazine	00	00	0	10	00	04	12	9	02	11	12	6
7. Visual aids	00	11	3	6	02	14	66	5	02	12	13	5
8. School subjects	00	04	1	8.5	02	04	29	8	14	15	32	3
9. (Other)	07	04	5	5	03	07	46	7	02	02	4	9
10. None	04	00	2	7	10	00	82	4	00	00	0	10
Total responding	(27)	(28)			(410)	(334)			(63)	(94)		
Personnel assisting:												
1. Scoutmaster	07	31	8	3	05	27	98	3	06	14	15	7
2. Ind. Arts teach.	04	00	2	8.5	02	09	35	5	19	08	28	2
3. Camp instructor	00	00	0	10	01	00	4	10	19	02	25	3
4. Merit badge counselor	11	31	10	2	09	29	135	2	19	16	32	1
5. Other Scout holding badge	07	00	4	6	00	07	18	7	00	08	4	10
6. Specially appointed person	11	08	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6	11	16	22	4
7. Parents	44	15	26	1	71	18	621	1	06	21	18	6
8. Teacher	04	15	4	6	01	01	11	9	13	08	20	5
9. (Other)	04	00	2	8.5	01	04	16	8	03	06	7	8
10. None	07	00	4	6	08	00	62	4	04	00	6	9
Total responding	(27)	(13)			(410)	(209)			(63)	(49)		
Influential subjects:												
1. Woodworking	00	00	0	11	18	12	167	2	00	00	0	9.5
2. Metalwork	11	00	6	4	02	18	36	6	00	00	0	9.5
3. Electricity	04	00	2	8	03	17	43	4	00	00	00	9.5
4. Mechanical Draw.	00	20	2	8	01	10	18	9.5	00	13	1	6
5. Crafts	04	00	2	8	04	07	42	5	39	25	52	2
6. Art	00	00	0	11	00	04	7	11	10	25	14	3
7. General Science	07	00	4	6	04	14	53	3	02	00	2	5
8. Machine Shop	04	60	8	2	02	10	28	7	00	00	0	9.5
9. Auto Mechanics	07	20	6	4	00	01	1	12	00	00	0	9.5
10. Physics	00	00	0	11	01	05	18	9.5	00	00	0	9.5
11. (Other)	11	00	6	4	02	02	19	8	04	37	9	4
12. None	52	00	28	1	63	00	518	1	45	00	56	1
Total responding	(27)	(10)			(410)	(122)			(63)	(8)		
Difficulties encountered:												
1. Applying for badge	04	00	2	7	02	04	21	7	00	00	0	10
2. Getting information	07	25	6	4	03	09	34	6	04	09	9	6
3. Personnel assisting	19	00	10	3	05	13	50	5	10	12	16	5
4. Time required	19	25	12	2	27	17	238	2	19	32	35	2
5. Tools, materials	00	37	3	6	08	29	101	3	13	09	19	4
6. Passing requirements	07	00	4	5	06	19	72	4	04	06	8	7.5
7. Cost	00	13	1	8	00	02	3	10	10	24	20	3
8. Final test	00	00	0	9.5	00	06	9	9	04	06	8	7.5
9. (Other)	00	00	0	9.5	02	01	15	8	00	03	1	9
10. None	44	00	24	1	49	00	400	1	35	00	44	1
Total responding	(27)	(8)			(410)	(128)			(63)	(34)		

[a]Column head symbols are explained in Table 16.

and belts. The only written tests reported were those in conjunction with school leather courses. The comments by the Scouts showed that outside assistance was required in nearly every case.

The Machinery, Masonry and Mechanical Drawing merit badges were analyzed and their results shown in Table 19. The two major reasons why the Scouts selected to acquire the Machinery merit badge was their interest in the subject and the fact that materials and equipment were available. The Scouts ranked the merit badge pamphlet first, personal contact second, and school subjects third, as important sources of information about machinery. The same Scouts identified the merit badge counselor, the industrial arts teachers and the parents as furnishing nearly equal assistance in their work with machines and tools. Thirty-one percent stated that no school subjects had any influence on them or the machinery badge. The courses that were designated as influencial before the badge was obtained were general science, machine shop and metalwork. No difficulties were encountered by 38 percent of the Scouts. The "getting information" and "passing requirements" categories tied for second in the kinds and number of difficulties met by the sixty-three Scouts earning the badge.

Models of wood and metal and sketches of machines were the types of projects built by the Scouts who earned the

Machinery badge. Oral tests that accompanied demonstrations and displays were used most as final review items by the Scouts. The comments by those who earned the badge implied that the requirements were difficult. Nearly every Scout required practical assistance over and above printed information available.

The fourteen Scouts who earned the Masonry merit badge did so chiefly because they were interested and secondly because materials and equipment were available. Necessary repair work and the fact that other Scouts worked the same badge were also influential reasons for earning the badge. Information about masonry was obtained primarily through contact with another person followed by the use of the merit badge pamphlet on masonry. The parents of the Scouts were most instrumental in providing assistance for the projects. The person specially appointed to counsel the Scouts and the merit badge counselor were next in providing assistance. No school courses had any influence on the Scouts obtaining the Masonry merit badge. Half of the boys expressed that the time required was the only difficulty they encountered.

All of the masonry projects reported were of a larger construction type. In some cases passing the requirements for the badge was the secondary objective. Inspection of the completed projects and oral quizzes were used as final approval of the badge's requirements. Comments made implied

that most of the projects were a joint undertaking with other persons.

The results secured from Scouts who earned the Mechanical Drawing merit badge showed that the principal reason they selected the badge was because they had taken mechanical drawing as a school subject. Interest in drawing contributed to the selection of the badge, but on a much lesser scale. The school's influence upon the badge was exhibited in each of the remaining questions asked. For instance, the main sources of information was the school subject followed by the merit badge pamphlet. The persons most influential in assisting the Scouts with mechanical drawing were the industrial arts teacher and all other teachers. Evidence showed that 93 percent of the Scouts who obtained this badge considered drawing in school the primary influence. The facts also showed that the time required to qualify for the award was the only major difficulty cited.

The projects used to qualify for this badge were mainly drawings done in the school mechanical drawing class. The same was true of the final test which in this case was primarily written. The comments generally concerned themselves with the fact that school classes were and should be used to qualify for the badge.

Table 19. Analysis of the machinery, masonry and mechanical drawing merit badges[a]

	Machinery				Masonry				Mechanical Drawing			
	%P	%S	V	R	%P	%S	V	R	%P	%S	V	R
Selection reasons:												
1. Interested	58	12	48	1	36	14	13	1	26	27	84	2
2. Looked easy	03	16	10	4	00	05	1	7.5	02	09	16	4
3. School subject	08	12	12	3	00	00	0	9	65	17	140	1
4. Job or work	03	14	9	5	07	10	4	5	01	01	4	7
5. Other Scout did same badge	03	02	3	8.5	21	14	9	3.5	02	04	10	6
6. Materials and equip. available	16	27	25	2	14	28	10	2	03	32	51	3
7. Repair work	03	10	7	6	21	14	9	3.5	00	00	0	8.5
8. Hobby	00	06	3	8.5	00	05	1	7.5	00	09	13	5
9. (Other)	06	00	4	7	00	10	2	6	00	00	0	8.5
Total responding	(36)	(49			(14)	(21)			(89)	(140)		
Information sources:												
1. Merit badge pamphlet	36	10	30	1	29	09	9	2	26	14	61	2
2. Scout Handbook	06	05	6	6	00	18	2	7	06	10	21	4
3. Personal contact	25	24	27	2	36	09	11	1	13	24	49	3
4. Work or job	03	16	8	4	14	27	7	3	00	05	5	6
5. Library	00	10	4	9	07	09	3	5.5	00	04	4	7
6. Magazine	00	13	5	8	00	00	0	9	00	02	2	8
7. Visual aids	03	10	6	6	07	18	4	4	00	11	12	5
8. School subjects	19	08	17	3	00	00	0	9	55	29	128	1
9. (Other)	00	03	1	10	07	09	3	5.5	00	01	1	9
10. None	08	00	6	6	00	00	0	9	00	00	0	10
Total responding	(36)	(38)			(14)	(11)			(89)	(105)		
Personnel assisting:												
1. Scoutmaster	03	11	4	6	14	21	7	4	02	21	15	4.5
2. Ind. Arts teach.	25	16	21	2	00	07	1	8	55	11	106	1
3. Camp instructor	00	05	1	9	07	07	3	5.5	00	02	1	9
4. Merit badge counselor	22	31	22	1	14	29	8	2.5	05	29	23	3
5. Other Scout holding badge	00	00	0	10	00	00	0	9.5	00	06	3	6
6. Specially appointed person	06	00	4	6	21	14	8	2.5	00	00	0	10
7. Parents	22	21	20	3	36	00	10	1	03	17	15	4.5
8. Teacher	13	11	13	4	00	21	3	5.5	33	10	69	2
9. (Other)	03	05	3	8	00	00	0	9.5	00	04	2	7.5
10. None	06	00	4	6	07	00	2	7	01	00	2	7.5
Total responding	(36)	(19)			(14)	(14)			(89)	(52)		
Influential subjects:												
1. Woodworking	08	00	6	5	00	00	0	7	02	26	10	2
2. Metalwork	13	11	11	4	00	00	0	7	00	09	2	6.5
3. Electricity	00	00	0	9.5	00	00	0	7	00	00	0	11.5
4. Mechanical Draw.	03	33	5	6	00	00	0	7	93	00	166	1
5. Crafts	00	11	2	8	00	00	0	7	00	00	0	11.5
6. Art	00	00	0	9.5	00	00	0	7	00	31	7	4
7. General Science	22	22	18	2	00	00	0	7	00	09	2	6.5
8. Machine Shop	19	11	15	3	00	00	0	7	00	13	3	5
9. Auto Mechanics	00	00	0	9.5	00	00	0	7	00	04	1	9
10. Physics	03	11	3	7	00	00	0	7	00	04	1	9
11. (Other)	00	00	0	9.5	00	00	0	7	00	04	1	9
12. None	31	00	22	1	100	00	28	1	05	00	8	3
Total responding	(36)	(9)			(14)	(0)			(89)	(23)		
Difficulties encountered:												
1. Applying for badge	00	07	1	8	00	00	0	8.5	02	00	4	8
2. Getting information	19	13	16	2.5	07	00	2	4.5	05	26	14	4
3. Personnel assisting	05	13	6	5.5	00	00	0	8.5	02	09	6	7
4. Time required	06	33	9	4	50	00	14	1	25	17	48	2
5. Tools, materials	06	07	5	7	07	25	3	3	03	17	10	5.5
6. Passing requirements	19	13	16	2.5	00	50	2	4.5	11	22	25	3
7. Cost	00	00	0	9.5	00	25	1	6	01	00	2	9
8. Final test	06	13	6	5.5	00	00	0	8.5	05	09	10	5.5
9. (Other)	00	00	0	9.5	00	00	0	8.5	00	00	0	10
10. None	38	00	28	1	36	00	10	2	46	00	82	1
Total responding	(36)	(15)			(14)	(4)			(89)	(23)		

[a]Column head symbols are explained in Table 16.

As shown in Table 20, the Metalwork, Printing and Photography merit badges were analyzed in the same manner as the preceding merit badges. The reasons for selection of the Metalwork badge by fifty-one Scouts were, first, because it was a subject taken in school and secondly, because of interest and the availability of supplies and equipment. The three most significant sources of information for this badge were the subjects taken in school, the Metalwork merit badge pamphlet and the personal contact of the Scouts with others working with metals. The teacher assistance with the Scouts' metalwork problems was evident by the industrial arts teachers receiving 52 percent and other teachers 30 percent of the primary votes. The metalwork course in school ranked high by receiving 74 percent of the selected primary choices. Over half of the Scouts asserted that they experienced no difficulties in obtaining the Metalwork badge. The time required to complete the projects and requirements was the only significant difficulty met by the Scouts.

The projects for the Metalwork badge showed a carry over from the school projects. Two general types of projects were reported, those used in the home and those used in camping. For the final test the Scouts had to show evidence of school credit in addition to displaying and explaining the items. Oral tests predominated for Scouts who did not

take metalwork in school. The comments by the Scouts made direct reference to assistance from school courses, teachers and craftsmen. The access to tools and supplies needed was mentioned as important in meeting the requirements for this badge.

The sixty Scouts who selected to acquire the Painting merit badge did so primarily for the reasons of repair work, interest in the subject, availability of paint and equipment and because it appeared easy to earn. The Scouts obtained their information about painting through personal contacts, from the merit badge pamphlet and from the Boy Scout Handbook (3). The parents of the Scouts primarily supervised and assisted the boys. The merit badge counselor also was considered important for assistance. Woodworking and art were two courses that showed any influence on painting. The only appreciable difficulty encountered by the Scouts was the time required to complete the badge.

The painting projects reported were mainly large buildings. Inspection of finished projects and other oral questions constituted the final reviews for the Scouts. When summarizing the comments on painting it showed that the Scouts underestimated the time and planning required for this merit badge.

The Scouts' interest in photography ranked first as a reason for desiring to obtain the Photography merit badge.

Photography was primarily a hobby for 37 percent of the Scouts reporting. The fact that equipment was available played a minor part in the reasons for choosing the badge. The two highest ranking sources of information were the Photography merit badge pamphlet and through contact with others willing to provide the needed information. The major assistance given the Scouts came from the assigned counselors. The parents and the camp instructors were next in helping the Scouts with the badge. General science was the most influential school subject mentioned by the Scouts. Difficulties encountered by the Scouts were not concentrated in any one area. The majority were mainly concerned with the time the badge required, the cost of the equipment and supplies and meeting the requirements.

The principal projects for this merit badge were the exposure, development, printing, mounting and presentation of pictures. The final test besides being oral in nature required the presentation of the finished photographs. The comments concerned the need for supervised instruction on the part of the Scouts. The comments also stated that this was an interesting field but greatly limited to Scouts at this time due to cost.

In Table 21 are shown results of questions asked Scouts who were awarded the Plumbing, Pottery and Printing merit badges. The reasons why forty Scouts selected the Plumbing

Table 20. Analysis of the metalwork, painting and photography merit badges[a]

	Metalwork				Painting				Photography			
	%P	%S	V	R	%P	%S	V	R	%P	%S	V	R
Selection reasons:												
1. Interested	16	25	38	2.5	27	14	44	2	50	23	66	1
2. Looked easy	00	24	21	4	18	09	29	4	00	13	11	5
3. School subject	68	06	75	1	00	01	1	8	00	01	1	7
4. Job or work	00	01	1	9	12	07	20	5	00	00	0	8.5
5. Other Scout did same badge	00	05	4	6	03	01	5	7	06	13	17	4
6. Materials and equip. available	16	25	38	2.5	07	38	39	3	06	28	31	3
7. Repair work	00	08	7	5	33	21	57	1	00	00	0	8.5
8. Hobby	00	04	3	7	00	09	7	6	37	19	51	2
9. (Other)	00	02	2	8	00	00	0	9	00	03	3	6
Total responding	(51)	(87)			(60)	(82)			(46)	(88)		
Information sources:												
1. Merit badge pamphlet	31	08	38	2	31	23	49	1.5	46	21	67	1
2. Scout Handbook	10	11	19	4	20	23	35	3	09	08	14	4
3. Personal contact	06	32	31	3	31	23	49	1.5	32	23	47	2
4. Work or job	00	02	2	7.5	12	09	18	4	02	01	3	8.5
5. Library	04	01	4	5	00	04	2	7.5	00	15	11	5
6. Magazine	00	02	2	7.5	00	04	2	7.5	09	11	16	3
7. Visual aids	02	13	3	6	03	09	8	5	00	12	9	6
8. School subjects	47	29	71	1	00	04	2	7.5	00	04	3	8.5
9. (Other)	00	01	1	9	00	00	0	10	02	04	5	7
10. None	00	00	0	10	02	00	2	7.5	00	00	0	10
Total responding	(51)	(79)			(60)	(47)			(46)	(73)		
Personnel assisting:												
1. Scoutmaster	02	11	26	5	15	11	22	3	02	13	6	6.5
2. Ind. Arts teach.	52	11	58	1	02	06	4	6	02	06	4	9
3. Camp instructor	04	00	4	7	00	03	1	9	20	03	19	3
4. Merit badge counselor	04	36	17	3	21	29	36	2	30	29	37	1
5. Other Scout holding badge	00	03	1	9.5	00	00	0	10	02	06	4	9
6. Specially appointed person	02	08	5	6	03	11	8	5	11	10	13	4
7. Parents	04	14	15	4	43	34	64	1	17	20	22	2
8. Teacher	30	14	35	2	02	03	3	7.5	04	06	6	6.5
9. (Other)	00	03	1	9.5	02	03	3	7.5	02	06	4	9
10. None	02	00	2	8	12	00	14	4	09	00	8	5
Total responding	(51)	(36)			(60)	(35)			(46)	(31)		
Influential subjects:												
1. Woodworking	00	08	1	9.5	13	25	17	2	00	00	0	9.5
2. Metalwork	74	00	76	1	03	00	4	4	00	00	0	9.5
3. Electricity	02	15	4	5	00	00	0	9.5	00	00	0	9.5
4. Mechanical Draw.	02	15	4	5	00	00	0	9.5	00	00	0	9.5
5. Crafts	00	08	1	9.5	00	75	3	5	02	00	2	6
6. Art	00	15	2	7.5	10	00	12	3	07	10	7	3
7. General Science	00	23	3	6	02	00	2	6	26	50	29	2
8. Machine Shop	02	15	4	5	00	00	0	9.5	00	00	0	9.5
9. Auto Mechanics	00	00	0	11.5	00	00	0	9.5	00	00	0	9.5
10. Physics	00	00	0	11.5	00	00	0	9.5	04	20	6	4.5
11. (Other)	02	00	2	7.5	00	00	0	9.5	04	20	6	4.5
12. None	18	00	18	2	72	00	86	1	57	00	52	1
Total responding	(51)	(13)			(60)	(4)			(46)	(10)		
Difficulties encountered:												
1. Applying for badge	00	06	1	8	05	06	7	7	00	04	1	10
2. Getting information	06	00	6	5.5	05	12	8	5	09	07	10	7
3. Personnel assisting	04	19	7	4	03	06	4	9	07	21	12	5
4. Time required	20	31	25	2	23	17	31	2	19	11	21	2
5. Tools, materials	04	06	5	7	03	17	7	7	09	11	11	6
6. Passing requirements	13	13	16	3	07	12	10	3.5	07	28	14	4
7. Cost	00	00	0	9.5	07	12	10	3.5	15	14	18	3
8. Final test	02	25	6	5.5	05	06	7	7	04	04	5	8
9. (Other)	00	00	0	9.5	00	12	2	10	02	00	2	9
10. None	51	00	52	1	42	00	50	1	28	00	26	1
Total responding	(51)	(16)			(60)	(17)			(46)	(28)		

[a]Column head symbols are explained in Table 16.

merit badge were in the order of their importance; interest, repair work, availability of materials and equipment and because other Scouts worked on the same badge. When working on this badge the Scouts made use of information obtained from three main sources: by contact with another person, from the Plumbing merit badge pamphlet, and from the Scouting Handbook (3). The persons contacted for help were the appointed member of the community, in this case the plumber, and the merit badge counselor. The parents also played an important part in aiding the Scouts with their plumbing requirements. The finding showed that 60 percent of the Scouts considered none of the school courses influential in procuring the badge. The subject listed most often by the remainder of the Scouts was general science. Assistance from other personnel and the availability of tools and materials were the two greatest drawbacks in securing the badge.

Projects completed for this badge mainly concerned diagrams of different types of plumbing systems. The final tests consisted of oral exams explaining the different operations conducted by the Scouts. The comments made by the Scouts concerning the plumbing merit badge made reference to the assistance required or recommended.

The study indicated that the Pottery merit badge was one of the least obtained of the industrial arts merit

badges. The motives for gaining this badge were, first because materials and equipment were available and second because pottery appeared to be an easy badge to obtain. The majority of the information used to pass the requirements came from the merit badge pamphlet. The second most important source of information was an authority on the subject. The merit badge counselor, parents and teachers were of equal importance in assisting the Scouts with this badge. No significant difficulties were reported by the Scouts who obtained this badge. The most popular projects reported for this badge were dishes, bowls and tiles. Oral quizzes predominated as a final check on the knowledge acquired. The Scouts' most frequent comments made reference to the use of school and camp facilities in obtaining this merit badge.

The Printing merit badge was selected by the Scouts more because of interest than for any other reason. The fact that printing was a school subject and that printing equipment was available played a substantial part in the Scouts' selection. The information on printing came from three main sources, personal contact with a local printer, the merit badge pamphlet and when available the printing course in school. Assistance on printing was obtained with the help of the merit badge counselor, the teacher and

Table 21. Analysis of the plumbing, pottery and printing merit badges[a]

	Plumbing				Pottery				Printing			
	%P	%S	V	R	%P	%S	V	R	%P	%S	V	R
Selection reasons:												
1. Interested	30	18	33	1	14	21	49	3	43	18	38	1
2. Looked easy	07	10	11	6	29	08	10	2	03	09	6	5
3. School subject	00	00	0	9	14	12	37	4	31	07	25	2.5
4. Job or work	05	00	4	7	00	00	0	8.5	06	02	5	6
5. Other Scout did same badge	20	08	20	4	00	12	3	6	11	14	14	4
6. Materials and equip. available	10	30	23	3	36	30	17	1	06	48	25	2.5
7. Repair work	15	26	25	2	00	00	0	0.5	00	00	0	8.5
8. Hobby	00	02	1	8	07	12	5	5	00	00	0	8.5
9. (Other)	13	06	13	5	00	04	1	7	00	02	1	7
Total responding	(40)	(50)			(14)	(24)			(35)	(44)		
Information sources:												
1. Merit badge pamphlet	37	13	35	2	50	05	15	1	28	19	28	2
2. Scout Handbook	17	03	15	3	07	05	3	5.5	06	12	9	4
3. Personal contact	37	31	42	1	36	15	13	2	32	38	38	1
4. Work or job	03	10	6	6	00	00	0	9.5	03	02	3	6
5. Library	00	03	1	9	07	05	3	6.5	00	02	1	9
6. Magazine	00	03	1	9	00	10	2	7	00	05	2	8
7. Visual aids	03	21	10	4.5	00	30	6	3	00	12	5	5
8. School subjects	00	03	1	9	00	25	5	4	28	10	24	3
9. (Other)	00	13	10	4.5	00	00	0	9.5	03	00	2	7
10. None	03	00	2	7	00	05	1	8	00	00	0	10
Total responding	(40)	(38)			(14)	(20)			(35)	(42)		
Personnel assisting:												
1. Scoutmaster	07	26	13	4	00	00	0	9.5	06	28	9	5
2. Ind. Arts teach.	00	00	0	9	07	09	3	4	17	05	13	4
3. Camp instructor	00	00	0	9	07	00	2	5.5	00	00	0	9.5
4. Merit badge counselor	30	26	31	1	28	18	10	2	34	17	27	1
5. Other Scout holding badge	00	04	1	7	00	00	0	9.5	00	05	1	8
6. Specially appointed person	28	18	27	2	00	09	1	7.5	17	11	14	3
7. Parents	20	15	20	3	28	18	10	2	00	17	3	7
8. Teacher	00	00	0	9	28	18	10	2	23	00	16	2
9. (Other)	07	11	9	5	00	09	1	7.5	03	17	5	6
10. None	07	00	6	6	00	18	2	5.5	00	00	0	9.5
Total responding	(40)	(27)			(14)	(11)			(35)	(18)		
Influential subjects:												
1. Woodworking	03	12.5	3	6.5	00	00	0	8.5	00	00	0	10.5
2. Metalwork	07	12.5	7	3	00	00	0	8.5	00	00	0	10.5
3. Electricity	00	00	0	11.5	00	00	0	8.5	00	00	0	10.5
4. Mechanical Draw.	05	12.5	5	5	00	00	0	8.5	03	00	2	6
5. Crafts	03	12.5	3	6.5	21	50	7	3	03	20	3	4.5
6. Art	00	12.5	1	9.5	29	50	9	2	03	20	3	4.5
7. General Science	12	25	12	2	00	00	0	8.5	06	20	5	3
8. Machine Shop	07	00	6	4	00	00	0	8.5	00	20	1	7.5
9. Auto Mechanics	00	00	0	11.5	00	00	0	8.5	00	00	0	10.5
10. Physics	03	00	2	8	00	00	0	8.5	00	20	1	7.5
11. (Other)	00	12.5	1	9.5	07	00	2	4	25	00	18	2
12. None	60	00	48	1	43	00	12	1	60	00	42	1
Total responding	(40)	(8)			(14)	(2)			(35)	(5)		
Difficulties encountered:												
1. Applying for badge	00	05	1	9.5	00	00	0	9.5	03	10	3	5
2. Getting information	03	16	5	7	14	00	4	3.5	03	00	2	8
3. Personnel assisting	13	31	16	2	00	25	1	7	06	50	9	3
4. Time required	07	05	7	6	14	25	5	2	28	10	21	2
5. Tools, materials	15	11	14	3	14	00	4	3.5	08	10	7	4
6. Passing requirements	10	11	10	4	07	00	2	5	06	00	4	6
7. Cost	00	05	1	9.5	00	25	1	7	00	00	0	10
8. Final test	07	11	8	5	00	25	1	7	03	00	2	8
9. (Other)	03	05	3	8	00	00	0	9.5	00	20	2	8
10. None	42	00	34	1	50	00	14	1	43	00	30	1
Total responding	(40)	(19)			(14)	(4)			(35)	(10)		

[a]Column head symbols are explained in Table 16.

the appointed printer. Twenty-five percent of the Scouts who earned the printing badge also studied printing in school. The time required for qualifying was a hinderance as expressed most often by the Scouts.

The printing of calling cards, stationary, and posters were the major projects reported by the Scouts. The final test in most instances was the display of items printed or the completion of a school printing course. The comments of the Scouts indicated that the availability of equipment and personal assistance were necessary for proper completion of the badge.

In Table 22 the analysis of the Radio, Woodcarving and Woodworking merit badges is presented. When asked why the Scouts selected the Radio merit badge, the two primary reasons given were that they were interested and that it was a hobby. When asked where the Scouts obtained their information they indicated that the merit badge pamphlet was the primary source and contact with an authority on radio was the second most important source. The merit badge counselor was the most influential person assisting the Scouts with problems concerning the Radio badge. When working on the Radio merit badge, physics, general science, and electricity, in that order, were the three most influential subject. Passing the requirements and the cost of equipment were the two main difficulties the Scouts earning the Radio badge encountered.

The building of a radio receiver was the major project completed by the Scouts for this badge. Other items constructed were variations of similar type radio equipment. In addition to the communication code test the final tests consisted of written and oral exams. The comments of the Scouts indicated that the badge carried a high degree of difficulty.

The Scouts who earned the Woodcarving merit badge stated that their interest was the major reason for its selection. The fact that the badge looked easy, materials and equipment were available and that woodcarving was a hobby were other reasons for it being selected. The merit badge pamphlet was checked as being the most useful information source. The Scout Handbook (3) and personal contacts were other beneficial sources of information. The merit badge counselor, Scoutmaster, and camp instructor were the three most helpful leaders on the subject of woodcarving. More than half of the Scouts indicated that no school subjects influenced this badge. The majority of the remainder disclosed that the woodworking and art courses had had some influence on this merit badge. The time required on the part of the Scout and the availability of tools and materials were the greatest difficulties reported.

The objects carved by the Scouts varied considerably. Some of the more frequent items included camping utensils,

neckerchief slides, figures and totem poles. The final tests for this badge were reported as oral in nature. The displaying of items was also a part of the final review. Summarizing the comments two points of view developed. One side was of the opinion that woodcarving was an easy, enjoyable and rewarding hobby. The other side was of the opinion that woodcarving was difficult, time consuming, needed assistance and dangerous.

According to Table 22 more Scouts acquired the Woodwork merit badge because it was a school subject than for any other reason. The next two reasons for their acquisition of the badge were their interests in wood and the fact that tools and materials were readily available. The influence of the school was evident throughout the analysis. Over 53 percent of the Scouts received their information from the subject in school. Twenty-seven percent considered the merit badge pamphlet the most important source of information. From the standpoint of assistance, the industrial arts teachers and all other school teachers were designated by 79 percent of the Scouts as being the personnel assisting them most in obtaining the badge. The most influential course as listed by 88 percent of the Scouts in relation to the Woodwork merit badge was the woodworking course. The major difficulties encountered by the Scouts in the woodworking field were the time required for the completion of

Table 22. Analysis of the radio, woodcarving and woodwork merit badges[a]

	Radio				Woodcarving				Woodwork			
	%P	%S	V	R	%P	%S	V	R	%P	%S	V	R
Selection reasons:												
1. Interested	48	22	36	1	39	17	131	1	20	26	85	2
2. Looked easy	00	07	3	6.5	24	16	94	2	02	14	26	5
3. School subject	00	02	1	8.5	06	03	23	6	64	09	153	1
4. Job or work	00	02	1	8.5	00	01	1	8.5	00	01	2	8.5
5. Other Scout did same badge	07	04	6	4	06	12	39	5	00	04	6	7
6. Materials and equip. available	00	31	14	3	09	33	90	3	05	24	51	3
7. Repair work	07	02	5	5	00	01	1	8.5	04	07	20	6
8. Hobby	37	22	30	2	14	15	67	4	05	14	34	4
9. (Other)	00	07	3	6.5	02	02	8	7	00	01	2	8.5
Total responding	(27)	(45)			(127)	(200)			(108)	(163)		
Information sources:												
1. Merit badge pamphlet	55	13	34	1	41	15	125	1	27	13	74	2
2. Scout Handbook	07	13	8	4	19	21	76	2	05	14	29	4
3. Personal contact	15	27	16	2	19	28	64	3	14	27	64	3
4. Work or job	00	03	1	9	02	00	4	9	00	06	8	6
5. Library	04	10	5	6	02	07	13	6	00	04	5	7.5
6. Magazine	11	10	9	3	00	08	11	8	00	04	5	7.5
7. Visual aids	00	20	6	5	03	15	25	5	01	08	12	5
8. School subjects	00	00	00	10	09	04	29	4	53	23	143	1
9. (Other)	04	03	3	7	00	02	3	10	00	01	1	9
10. None	04	00	2	8	05	00	12	7	00	00	0	10
Total responding	(27)	(30)			(127)	(130)			(108)	(125)		
Personnel assisting:												
1. Scoutmaster	04	25	6	4.5	19	11	57	3	05	11	18	5
2. Ind. Arts teach.	00	06	1	9	08	04	23	6	58	08	132	1
3. Camp instructor	00	06	1	9	13	10	42	4	01	00	2	8.5
4. Merit badge counselor	40	00	22	1	19	23	67	1	05	37	36	3
5. Other Scout assisting badge	04	13	4	6.5	02	20	22	7	00	01	1	10
6. Specially appointed person	04	25	6	4.5	02	05	10	9	02	06	6	6
7. Parents	11	19	9	3	09	22	40	5	06	18	27	4
8. Teacher	07	09	4	6.5	04	04	13	8	21	16	57	2
9. (Other)	00	06	1	9	00	01	1	10	00	03	2	8.5
10. None	30	00	16	2	24	00	60	2	02	00	4	7
Total responding	(27)	(16)			(127)	(81)			(108)	(71)		
Influential subjects:												
1. Woodworking	00	00	0	9	29	11	78	2	88	00	95	1
2. Metalwork	00	00	0	9	00	03	1	6.5	00	03	1	10
3. Electricity	22	00	12	4	00	00	0	10	00	00	0	11.5
4. Mechanical Draw.	00	00	0	9	00	03	1	6.5	01	35	14	3
5. Crafts	00	00	0	9	08	44	36	4	01	23	10	4
6. Art	00	00	0	9	11	36	61	3	00	21	7	5
7. General Science	19	18	13	3	00	00	0	10	00	09	3	7.5
8. Machine Shop	00	00	0	9	00	00	0	10	00	09	3	7.5
9. Auto Mechanics	00	00	0	9	00	00	0	10	00	00	0	11.5
10. Physics	11	82	20	2	00	00	0	10	01	00	2	9
11. (Other)	04	00	2	5	01	03	3	5	02	00	4	6
12. None	44	00	24	1	51	00	130	1	07	00	16	2
Total responding	(27)	(17)			(127)	(36)			(108)	(34)		
Difficulties encountered:												
1. Applying for badge	04	00	2	8	04	03	11	7	04	00	10	6.5
2. Getting information	00	10	2	8	07	03	19	5	02	03	5	9
3. Personnel assisting	00	10	2	8	04	15	15	6	04	06	10	6.5
4. Time required	07	14	7	5	19	15	53	2	25	17	59	2
5. Tools, materials	04	05	3	6	12	24	38	3	04	17	13	4.5
6. Passing requirements	19	19	14	2	07	24	26	4	11	10	27	3
7. Cost	11	19	10	3	00	09	3	9	02	30	13	4.5
8. Final test	07	23	9	4	02	06	8	8	02	17	9	8
9. (Other)	00	00	0	10	00	00	0	10	01	00	2	10
10. None	48	00	26	1	45	00	114	1	45	00	98	1
Total responding	(27)	(21)			(127)	(33)			(108)	(30)		

[a]Column head symbols are explained in Table 16.

of the projects and meeting the requirements.

Various kinds, types and sizes of projects were listed as having been completed to qualify for the Woodwork badge. In a number of cases projects were constructed in the school shop class and credit for part or all of the requirements was given upon certification of the completion of the course. Both indoor and outdoor furniture were included on the list of projects completed. Tables were the largest single group of items represented. The final test, besides the displaying of the projects, was of an oral type. The written tests in most cases referred to those administered by the industrial arts woodworking teachers. The recommendations made by the Scouts stated that the using of school shop facilities should be encouraged to its maximum. A frequent comment was that the badge was useful, rewarding and enjoyable.

The values calculated for each of the answers to all of the twenty-one merit badges were assembled and processed. The overall totals, percentages and rankings for each answer are indicated in Table 23.

The results showed that 23.6 percent of the Scouts chose an industrial arts merit badge because they were interested in the subject. The fact that certain merit badges appeared to the Scouts to be rather easy to acquire ranked second by receiving 17.5 percent of the points. Followed closely with 17.1 percent of the points was the selection

reason of having materials and equipment available. The summations revealed that related subjects taken in school ranked forth among reasons why Scouts decided to earn industrial arts merit badges. The selection reason pertaining to repair work ranked fifth of nine with 11.1 percent of the value points.

The individual merit badge pamphlets were considered the most important source of information used by the Scouts. The pamphlets as a group ranked first with 28.1 percent of the value points. The Scouts designated personal contact with leaders and other authorities as the second most important source of information for merit badges. The influence of the school as an information source ranked third by gaining 14.9 percent of the total responses. The official Boy Scout Handbook (3) was forth with 13.9 percent of the overall answers on information sources.

When the Scouts were asked to designate which personnel assisted them most with their industrial arts merit badges their responses by percent for the first five categories were as follows: parents 26.2, merit badge counselors 16.9, industrial arts teachers 12.5, other teachers 12.4, and Scoutmaster 9.6. When industrial arts and other teachers were combined into a single group they included 24.9 percent or 1.4 percent from being the most influential.

The influence certain school subjects played upon all

Table 23. Analysis totals for industrial arts merit badges

	Total value	Percentage	Rank order
Selection reasons:			
1. Interested	1360	23.6	1
2. Looked easy	1007	17.5	2
3. School subject	723	12.6	4
4. Job or work	127	2.2	9
5. Other Scout did same badge	395	6.9	6
6. Materials and equipment available	985	17.1	3
7. Repair work	640	11.1	5
8. Hobby	376	6.5	7
9. (Other)	137	2.4	8
Total responding	5750	100.0	
Information sources:			
1. Merit badge pamphlet	1430	28.1	1
2. Scout Handbook	701	13.9	4
3. Personal contact	1146	22.6	2
4. Work or job	156	3.4	7
5. Library	187	3.7	6
6. Magazine	130	2.6	8
7. Visual aids	315	6.2	5
8. School subjects	757	14.9	3
9. (Other)	112	2.2	10
10. None	121	2.4	9
Total responding	5058	100.0	
Personnel assisting:			
1. Scoutmaster	407	9.6	5
2. Ind. Arts teacher	532	12.5	3
3. Camp instructor	208	4.9	8
4. Merit badge counselor	722	16.9	2
5. Other Scout holding badge	120	2.8	9
6. Specially appointed person	261	6.1	7
7. Parents	1111	26.2	1
8. Teacher	529	12.4	4
9. (Other)	98	2.3	10
10. None	270	6.3	6
Total responding	4258	100.0	

Table 23 (Continued)

	Total value	Percentage	Rank order
Influential subjects:			
1. Woodworking	385	11.1	2
2. Metalwork	154	4.4	7
3. Electricity	151	4.4	8
4. Mechanical Drawing	250	7.2	4
5. Crafts	238	6.9	6
6. Art	290	8.4	3
7. General Science	249	7.2	5
8. Machine Shop	72	2.1	11
9. Auto Mechanics	19	.5	12
10. Physics	99	2.8	10
11. (Other)	142	4.1	9
12. None	1418	40.7	1
Total responding	3468	100.0	
Difficulties encountered:			
1. Applying for badge	98	2.5	9
2. Getting information	228	5.9	6
3. Personnel assisting	232	6.0	5
4. Time required	814	21.4	2
5. Tools and materials	338	8.8	3
6. Passing requirements	310	8.0	4
7. Cost	111	2.8	8
8. Final test	119	3.1	7
9. (Other)	46	1.2	10
10. None	1557	40.3	1
Total responding	3853	100.0	

industrial arts merit badges deviated moderately between subjects. More Scouts designated that none of the subjects were influential than any other category. The "None" category with 40.7 percent of the points carried a 29.6 percent plurality over the next closest choice. The woodworking courses in school influenced more badges than any other course listed with 11.1 percent of the responses.

No difficulties when acquiring the merit badges were reported by 40.3 percent of the Scouts. The difficulty encountered by more Scouts than any other was the time necessary to work on and pass the requirements. This followed by the non-availability of tools and materials with 8.8 percent of the responses. The passing of the requirements, 8.0 percent; the inadequate personnel assistance, 6.0 percent and the difficulty of acquiring information, 5.9 percent were the next three categories of encountered difficulties. The final test for each badge, 3.1 percent; the cost of items needed, 2.5 percent and all others, 1.2 percent completed the listing of encountered difficulties.

SUMMARY

The Boy Scout movement over the fifty years of its growth has furnished the boys of this country with many desirable and enjoying experiences. An important part of this youth program has been the exploration and development of acceptable traits carried into adult life. One means developed to achieve this goal was the comprehensive merit badge program. This study concerned itself with an analysis of twenty-one merit badges related to industrial arts and the Scouts who earned them.

The purpose of this study was to ascertain the answers to the following questions:

1. What current facts can be made available concerning the industrial arts merit badges of the Boy Scout movement?
2. What influence do the industrial arts merit badges have upon the merit badge program?
3. What are some of the interrelationships existing between the industrial arts merit badges?
4. Under what circumstances do the Scouts undertake the acquisition of each industrial arts merit badge?

The source selected to provide the information needed to make determinations about the industrial arts merit badge program was Iowa Boy Scouts of Eagle rank. The Scouts who

provided the information were limited to those who lived in Iowa when receiving their Eagle rank between January 1958 and January 1961. Eagle Scouts were preferred over other Scouts or Scout leaders because of their limited number, high character reference, age, and greater possibility of having had experience with the industrial arts merit badges.

The method used to obtain the needed information was to mail a questionnaire to all of the Eagle Scouts whose addresses were provided by their area council headquarters. A total of 725 questionnaires were mailed on January 3, 1961. After an eight week period 482 correctly completed inquiries were returned to be used in the analysis of the problem.

The requested information was tabulated and classified into four predetermined categories. These categories were as follows: 1. information pertaining to the Scouts who answered the questionnaire, 2. the industrial arts influence on all merit badges earned by the Scouts, 3. the inter-relationship existing between industrial arts merit badges from certain variable characteristics, and 4. the analysis of each individual industrial arts merit badge.

Finding of major importance were:

1. That the following characteristics best described the average Iowa Eagle Scout. He was sixteen years and nine months old and lived in an urban type environment of city proportions. He was enrolled in one of the upper grades in

high school. He had taken 2.28 industrial arts courses while in school. The courses he had taken were woodworking and mechanical drawing with either art or metalwork as the probable third course. The Scout had definite intentions of continuing his education after high school.

2. The influence industrial arts merit badges had upon the merit badges program was established for the average and minimum Eagle Scout. Of the 100 merit badge subjects available 21 percent were of an industrial arts nature. Deduction of the fifteen required badges meant that industrial arts badges represented 24.7 percent of the available non-required badges.

Upon removal of the required non-industrial arts type merit badges from each classification it was established that out of the 12,233 badges awarded, 5,003 were non-required. These badges included 1,673 industrial arts type merit badges earned by the 482 Scouts. Each Eagle Scout earned an average of 25.38 merit badges, 10.38 of which were non-required and in turn 3.471 of these were of an industrial arts subjects. Of the total badges earned 13.68 percent were industrial arts subjects. At the same time 33.44 percent of the non-required badges were of the industrial arts type.

The minimum Eagle Scout, who had only the required twenty-one merit badges, had six possible unrestricted

choices from which to make his selection of subjects. It was established that 47.81 percent or 2.87 of the possible six badges were of an industrial arts nature.

The mean, median and mode of industrial arts merit badges earned by the 482 Eagle Scouts were 3.47, 2.50 and 2.00 badges respectively.

3. The five most frequently earned industrial arts merit badges were, Home Repairs, Art, Woodcarving, Woodwork and Basketry. The five merit badges earned least often were, Farm Mechanics, Radio, Architecture, Masonry and Pottery.

Utilizing the Spearman Rank Order Method, the frequency ranking of the merit badges earned by Iowa Eagle Scouts was found to correlate plus .950 with the same badges earned by all Scouts nationally over the same three year period. Applying the Person Product Moment Method to the same information a plus .974 coefficient of correlation was obtained. The correlation between the ranked Iowa frequencies and the national totals for fifty years using the rank order method was a plus .875.

4. The order in which each industrial arts badge was completed in relation to all other industrial arts badges the Scouts had earned was established. The five badges that received the highest completion-preference index were Art, Bookbinding, Home Repairs, Basketry and Pottery. Those

badges with the lowest index were, the Radio, Photography, Printing, Architecture and Automobiling merit badges.

5. The degree difficulty in acquiring any particular badge was evaluated by those Scouts who actually completed the requirements. Their indications showed that the Radio, Architecture, Masonry, Photography and Mechanical Drawing merit badges were the most difficult. At the same time the Scouts considered the Basketry, Home Repairs, Art, Bookbinding and Woodcarving as the least difficult merit badges.

6. The Farm Mechanics, Home Repairs, Art and Painting merit badges were earned more often by Scouts while working alone than any of the other badges. The requirements for the Masonry, Plumbing, Bookbinding, Pottery and Printing merit badges were worked on more often by two or more Scouts together than any of the other badges. All twenty-one industrial arts merit badges were earned by the Scouts working individually in 72.05 percent of the cases.

7. When granted complete freedom to acquire any of the selected badges the Scouts most frequently chose the following merit badges: Automobiling, Photography, Electricity, Radio, Architecture and Mechanical Drawing. The least preferred were the Pottery, Home Repairs, Plumbing, Bookbinding, Masonry and Farm Mechanics merit badges.

8. When asked to select the badges easiest to earn the Scouts indicated the Basketry, Home Repairs, Bookbinding, Woodcarving, Art and Painting merit badges. The badges least mentioned as being easy were the Machinery, Metalwork, Farm Mechanics, Masonry, Architecture and Radio merit badges.

9. The Scouts, when required to identify the merit badges most difficult to acquire selected the Radio, Architecture, Electricity, Machinery, Farm Mechanics and Masonry merit badges. The badges identified as least difficult to earn were the Woodcarving, Leatherwork, Painting, Boodbinding, Basketry and Home Repairs merit badges.

10. The intercorrelations obtained between the rank order of twenty-one industrial arts merit badges on the basis of seven variable characteristics by employing the Spearman Rank Order Method were as follows:

(a) Frequency, a marked relationship with Easiest, marked negative with Degree of Difficulty and Difficult, moderate with Order of Completion, low with Worked Alone and negligible with Preference.

(b) Order of Completion, a moderate negative relationship with Degree of Difficulty, Preference and Difficult, moderate with Easiest and Frequency, and negligible with Worked Alone

(c) Degree of Difficulty, a high relationship with Difficult, high negative with Easiest, marked negative

with Frequency, moderate negative with Order of Completion, low with Preference, and low negative with Worked Alone.

(d) Worked Alone, a low relationship with Frequency and Preference, low negative with Degree of Difficulty, and negligible with Order of Completion, Easiest and Difficult.

(e) Preference, a moderate relationship with Difficult, moderate negative with Order of Completion, low with Degree of Difficulty and Worked Alone, and negligible with Frequency and Easiest.

(f) Easiest, a high negative relationship with Difficult and Degree of Difficulty, marked with Frequency, moderate with Order of Completion, and negligible with Worked Alone and Preference.

(g) Difficult, a high negative relationship with Easiest, high positive with Degree of Difficulty, marked negative with Frequency, moderate negative with Order of Completion, moderate with Preference, and negligible with Worked Alone.

11. In the analysis of the Architecture merit badge interest was the main reason for selection; the library, the major source of information; the industrial arts teacher, the primary person assisting; mechanical drawing, the most

influential school subject and no substantial difficulty encountered.

12. In the analysis of the Art merit badge interest was the main reason for selection; the merit badge pamphlet, the major source of information; the teacher, the primary person assisting; art, the most influential school subject and no substantial difficulty encountered.

13. In the analysis of the Automobiling merit badge interest was the main reason for selection; the merit badge pamphlet, the major source of information; the teacher, the primary person assisting; driver training, the most influential school subject and no substantial difficulty encountered.

14. In the analysis of the Basketry merit badge, the fact that it looked easy was the main reason for selection; the merit badge pamphlet, the major source of information; the camp instructor, the primary person assisting; no school subject most influential and no substantial difficulty encountered.

15. In the analysis of the Bookbinding merit badge, the fact that it looked easy was the main reason for selection; personnel contacted, the major source of information; a specially appointed person, the primary person assisting; no school subject most influential and no substantial difficulty encountered.

16. In the analysis of the Electricity merit badge interest was the main reason for selection; the merit badge pamphlet, the major source of information; the merit badge counselor, the primary person assisting; electricity, the most influential school subject and no substantial difficulty encountered.

17. In the analysis of the Farm Mechanics merit badge interest was the main reason for selection; the merit badge pamphlet, the major source of information; the parents, the primary people assisting; no school subject most influential and no substantial difficulty encountered.

18. In the analysis of the Home Repairs merit badge repair work was the main reason for selection; the merit badge pamphlet, the major source of information; the parents, the primary people assisting; no school subject most influential and no substantial difficulty encountered.

19. In the analysis of the Leatherwork merit badge interest was the main reason for selection; the personnel contacted, the major source of information; the merit badge counselor, the primary person assisting; no school subject most influential and no substantial difficulty encountered.

20. In the analysis of the Machinery merit badge interest was the main reason for selection; the merit badge pamphlet, the major source of information; the merit badge counselor, the primary person assisting; no school subject

most influential and no substantial difficulty encountered.

21. In the analysis of the Masonry merit badge interest was the main reason for selection; the personnel contacted, the major source of information; the parents, the primary people assisting; no school subject most influential and the time required the greatest difficulty encountered.

22. In the analysis of the Mechanical Drawing merit badge a school subject was the main reason for selection; the school subject, the major source of information; the industrial arts teacher, the primary person assisting; mechanical drawing, the most influential school subject and no substantial difficulty encountered.

23. In the analysis of the Metalwork merit badge a school subject was the main reason for selection; the school subject, the major source of information; the industrial arts teacher, the primary person assisting; metalwork, the most influential school subject and no substantial difficulty encountered.

24. In the analysis of the Painting merit badge repair work was the main reason for selection; the merit badge pamphlet and personnel contacted, of equal important as information sources; the parents, the primary people assisting; no school subject most influential and no substantial difficulty encountered.

25. In the analysis of the Photography merit badge

interest was the main reason for selection; the merit badge pamphlet, the major source of information; the merit badge counselor, the primary person assisting; no school subject most influential and no substantial difficulty encountered.

26. In the analysis of the Plumbing merit badge interest was the main reason for selection; the personnel contacted, the major source of information; the merit badge counselor, the primary person assisting; no school subject most influential and no substantial difficulty encountered.

27. In the analysis of the Pottery merit badge, the fact that materials and equipment were available was the main reason for selection; the merit badge pamphlet, the major source of information; the merit badge counselor, the parents and the teacher, equal in assisting; no school subject most influential and no substantial difficulty encountered.

28. In the analysis of the Printing merit badge interest was the main reason for selection; the personnel contacted, the major source of information; the merit badge counselor, the primary person assisting; no school subject most influential and no substantial difficulty encountered.

29. In the analysis of the Radio merit badge interest was the main reason for selection; the merit badge pamphlet, the major source of information; the merit badge counselor, the primary person assisting; no school subject most

influential and no substantial difficulty encountered.

30. In the analysis of the Woodcarving merit badge interest was the main reason for selection; the merit badge pamphlet, the major source of information; the merit badge counselor, the primary person assisting; no school subject most influential and no substantial difficulty encountered.

31. In the analysis of the Woodwork merit badge a school subject was the main reason for selection; the school subject, the major source of information; the industrial arts teacher, the primary person assisting; woodworking, the most influential school subject and no substantial difficulty encountered.

32. The primary reasons Scouts selected industrial arts subjects were interest, 23.6 percent; appeared easy to acquire, 17.5 percent and availability of materials and equipment, 17.1 percent. Two other influential reasons were school subjects with 12.6 percent and repair work with 11.1 percent of the responses.

33. The Scouts obtained their information primarily, 28.1 percent, from each subject's respective merit badge pamphlet. Other marked sources of information were through personal contact, 22.6 percent; school subjects, 14.9 percent and the Scout Handbook (3), 13.9 percent.

34. When assistance was found necessary the Scouts relied upon the parents, 26.2 percent; the merit badge

counselor, 16.9 percent; the industrial arts teacher, 12.5 percent and all other teachers, 12.4 percent of the time.

35. None of the school subjects had any significant influence upon the merit badges as a whole. The woodworking course, with 11.1 percent; art, with 8.4 percent and mechanical drawing and general science, each with 7.2 percent; were the four most mentioned courses having any influence upon the Scouts and their badges.

36. The Scouts signified that they encountered no difficulties in 40.3 percent of their merit badge work. The time required to complete some of the individual badges predominated as a difficulty in 21.4 of the cases. Tools and materials, 8.8 percent; passing requirements, 8.0 percent; and personnel assisting, 6.0 percent; were the next three types of difficulties mentioned.

DISCUSSION

The problems of Scouting in rural areas are nothing new to the Boy Scout movement. The findings revealed that only nine percent of the Scouts lived in a rural environment. This was a rather low percent when one considered the number of subjects and merit badges in the Scouting program related to rural life and the State of Iowa as being agrarian in nature. The two main reasons for such a low rural proportion are the distances between members of a troop and the various other youth clubs and organizations that possess many of the same developmental and project objectives. The two largest clubs represented in Iowa are the Future Farmers of America and the 4-H. It is believed that a very small percentage of the rural youth belong to more than one organization.

Four of the Scouts that received their Eagle awards over the last three years were over forty years of age. These situations are not necessarily rare because these Scouts most likely fell into either or both of two situations. In most cases the adult either wishes to earn his Eagle rank simultaneously with his son or the adult began his Scouting years before and has now returned in order to acquire the few remaining badges for his Eagle rank.

The Scout's grade placement and school curriculum, and

his advancement in rank are matters of concern to both organizations. This is especially true when applied to the industrial arts phase of education. The Scout will in most instances use the courses as a means to qualify for certain tests and merit badges. The Scout therefore will be more eager to learn and should be identified by his instructors. This recognition will allow a chance for more advanced or specialized work because of the Scout's added incentives. At the same time the instructors must pay attention to the age level of the Scout and the safety factors of the equipment being employed.

In many of the cases cited the Scouts earned only those industrial arts merit badges that corresponded with the courses completed in school. This is the reason for the high percentage of Woodwork and Mechanical Drawing merit badges being awarded. In some general shop courses the variety of units offered allowed the Scouts to gain information and receive supervised experience for several badge subjects at the same time.

The average Eagle Scout completed slightly over two industrial arts courses. The findings also revealed that 80 percent of the Scouts had completed 2.9 industrial arts courses. In the medium and smaller sized schools that would mean that the Scouts completed all or nearly all industrial arts courses offered. The high interest in the industrial

arts was also evident when the average Scout, when obtaining his Eagle rank, selected 2.87 badges of an industrial arts nature out of the six remaining unrestricted choices.

Table 8, which showed the order of completion of the merit badges, clearly demonstrated a pattern of subjects related to the development of a boy's skill and maturity. While in junior high and during the Scout's summer camps a boy was subject to several types of art and handicraft. These beginning merit badges also included those subjects that could be done at home with limited parental supervision. As the Scout advanced into the high school grades the usual, and in some cases special industrial arts subjects became available. In the last part of the array the merit badge subjects became more technical and the safety factor became more important. The equipment used in the final badges became more delicate and valuable. The resulting list of badges, the order in which the badges were completed, corresponded more closely to the Scout's capabilities and environment than to his interests. When comparing the foregoing array with the list of badges in Table 11, the preference for the same subjects, a clear reversal of most of the badges was observed.

The high coefficient of correlation between the frequency of the badges earned by Iowa Eagle Scouts and those

earned by all Scouts nationally was not taken too critically because of the criterion under which it was tested. The 77.35 percent prediction ability obtained from the correlation was also effected by the partially incoherent comparison.

Throughout the study results and comments have been made about certain characteristics of the twenty-one merit badges studied. In addition to the type of analysis used, it was observed that an individual badge, by its change in ranking between characteristics also took on added meaning. This was best illustrated in Table 14 which listed the ranking of the badges by the seven selected characteristics.

The Art merit badge is used here as an example of the fluctuation analysis. The Art merit badge ranked 2nd in frequency or the number of times it was earned. It was the first industrial arts type badge completed by the Scouts. This meant that if a Scout had earned four of the badges and one of them was the Art merit badge he most likely would have earned Art first. The Art badge ranked 19th as being difficult to the Scouts who earned it. Thereby making Art rather easy as compared to most of the other badges earned. Art as a profession or hobby is a type of work one most likely would do alone. This was also confirmed by the Scouts by ranking it 3rd in the "worked alone" category. The Scouts who had not earned the badge ranked it 8th in preference

close behind Architecture and Mechanical Drawing, two other similar type subjects. The comparison of the Art badge on the basis of easy to earn by those who did not earn it as to those who did it was only two rankings apart. Under the "easy" variable it ranked 5th, but if inverted it would be 17th as compared to 19th by those who earned the badge. When looking at the rating on the "difficult" scale as expressed by those who did not earn the Art badge, it only dropped to 12th place. This is not in agreement with the "easy" scale. In this case it is difficult to say which is incorrect, but the investigator believes that Art should have been ranked much lower on the "difficult" scale in order to compare with most of the other classifications.

Still another way to look at these ranking lists is to take two or more characteristics and observe the changes occurring with a few or all of the badges in those groups selected. To illustrate the comparison of three characteristics the first five badges in the frequency category are compared with the same badges in the easy evaluation category and then to the badges in the degree of difficulty category.

Home Repairs	1st, frequency;	2nd, easy;	20th, difficulty.
Art	2nd, frequency,	5th, easy;	19th, difficulty.
Woodcarving	3rd, frequency;	4th, easy;	17th, difficulty.
Woodwork	4th, frequency;	9th, easy;	10th, difficulty.
Basketry	5th, frequency;	1st, easy;	21st, difficulty.

Except for the Woodwork badge all other badges remained

within the first or last five rankings. The conclusion drawn from this short example is that Scouts earn merit badges because they are easy. The main reason for Woodwork being in this group was because the course was offered in school. As shown here Woodwork was of medium difficulty. Table 15 gave the numeral coefficients of correlations for each of the possible twenty-one combinations of the seven characteristics. The results obtained can be analyzed in much greater detail than what was presented in this study.

The analysis of each merit badge was shown in tabular form in Tables 16 through 22. These responses for each answer were totaled and displayed in Table 23.

More Scouts signified that they obtained the badges because they were interested than for any other reason. This should be the main reason because this is the basis behind the entire exploratory system. The percentage of Scouts who gave "interested" as a reason was much too small. It is the investigator's belief that the next answer "looked easy" was much too high and that this was more of a reason behind the acquisition of many badges than what the results show. This situation was the downfall of the entire merit badge system. The intrinsic value has been lost by the extrinsic values of display and advancement. This was not the situation in all cases but was much too high to be ignored.

The influence of the school was demonstrated by more

than just the availability of courses. It is believed that the school plays a major part in providing some of the necessary tools and equipment needed for many of the badges. The Scouts obtained over half of the information needed to pass the badge requirements by utilizing the specialized merit badge pamphlets and through personal contact with the merit badge counselors. This high percentage was partly due to fact that both sources of information are being made available to the Scouts without much additional effort on their part.

The main reason why parents were so much more influential in assisting the Scouts than any other personnel was because of two particular badges. These merit badges were Home Repairs and Painting, both of which required supervision responsibilities about the home. The assigned merit counselor was the one single person who assisted the Scouts most with their work. All teachers combined played an equal part with the parents in helping the Scouts with the information and assistance needed for the twenty-one merit badges.

Of all the school subjects listed woodworking lent itself to being more influential than any other. This was due for two primary reasons: 1. woodworking was offered more than any other course by the schools and 2. the knowledge and skills learned in woodworking have beneficial

transfer capabilities to other similar subjects and badges.

The time required to earn a badge was named as the mostfrequent difficulty encountered by the Scouts. This in its true sense is not actually a difficulty because time is required for all badges. In other words, the trouble here was the length of time over and above that which was first anticipated by the Scout as being necessary to pass the requirements. Many Scouts in this situation were more concerned with gaining the embroidered badge than with obtaining and utilizing the knowledge and skills which it required.

Further research is needed. Possible studies which suggested themselves to the investigator included:

1. A determination of the association between school industrial arts programs, their teachers and administrators and the industrial arts merit badges in the Scouting movement. The attitudes of and the assistance offered by teachers on the subject of merit badge counseling. A study of actual practices being conducted between the two organizations.

2. A determination of the effects industrial arts merit badges had upon former Boy Scouts. An evaluation of the results merit badges have had upon education, vocations, positions and hobbies.

3. A similar study of this type as soon as possible in another locality, preferably in the eastern or western part of the United States over the same rank and the same industrial arts merit badges.

4. A similar study of this type in the same or different locality on other types or kinds of merit badges.

5. A similar study of this type in the same or different locality using the same merit badges but directed toward both voluntary and professional Scout leaders.

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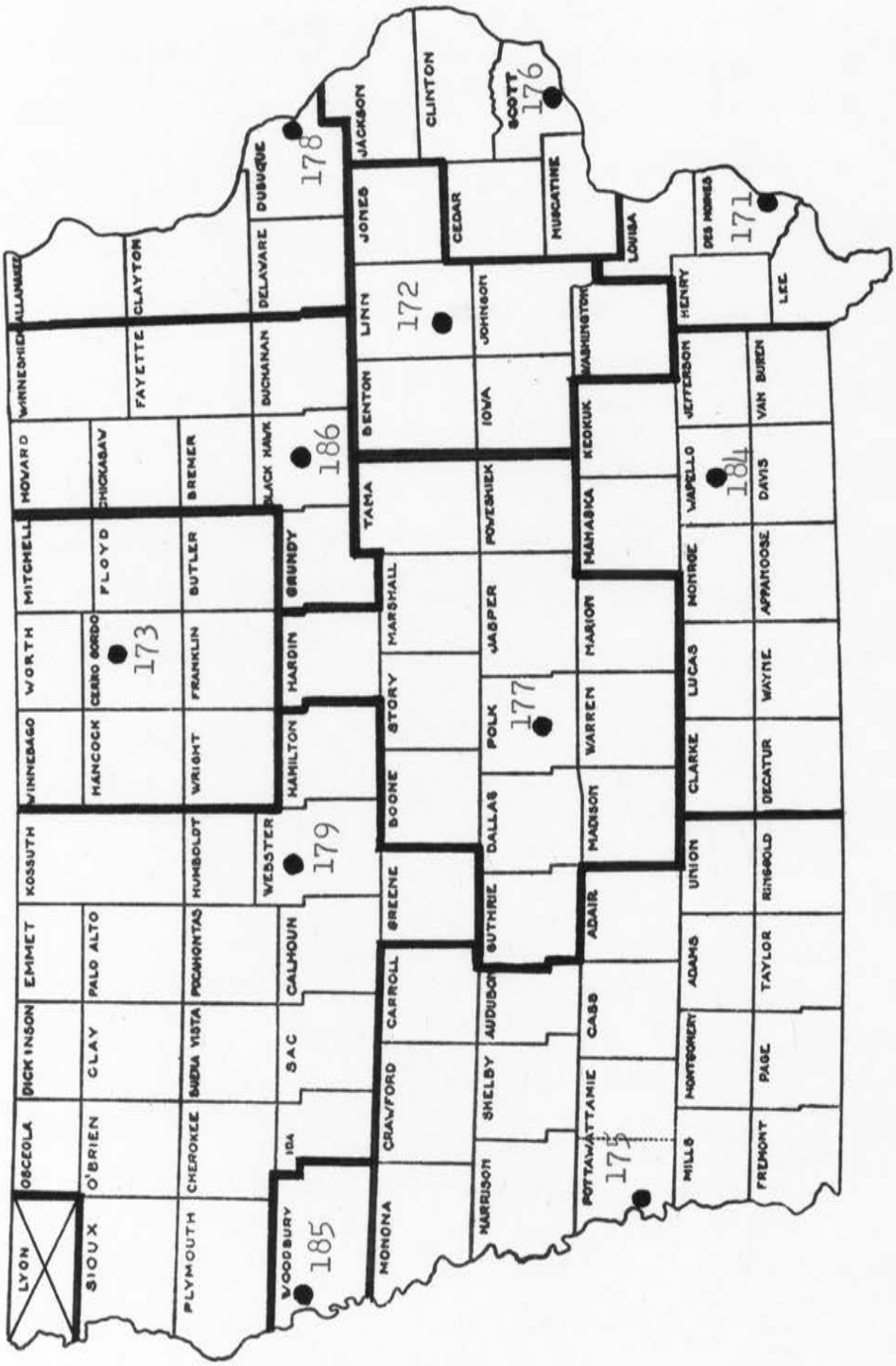
APPENDIX A

Boy Scout Area Councils of Iowa

Figure 1. Boy scout area councils and location of headquarters in Iowa

Number	Name	Location
171	Southeast Iowa	Burlington
172	Hawkeye	Cedar Rapids
173	Winnebago	Mason City
175	Southwest Iowa	Council Bluffs
176	Buffalo Bill	Davenport
177	Tall Corn	Des Moines
178	Northeast Iowa	Dubuque
179	Prairie Gold	Fort Dodge
184	Southern Iowa	Ottumwa
185	Sergeant Floyd	Sioux City
186	Wapsipinicon	Waterloo


LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
BLACK HAWK
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
IOWA
JOHNSON
CEDAR
CLINTON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
MUSCATINE
SCOTT
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
LEE
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
185
179
186
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176
177
175
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171

APPENDIX B

Questionnaire

Ames, Iowa
January 3, 1961

Dear Fellow Scout,

"On my honor I will do my best....
....To help other people at all times...."

I'm sure you will recognize this as part of our Scout Oath which you and I learned during our first weeks in Scouting. Ever since, we have been evaluated by others on how closely we obey this Oath, The Scout Law, and other rules of good conduct.

With this letter--questionnaire I am asking for your kind help and trustworthiness. In turn, I have full confidence you will do this diligently; the same as you have shown in earning your Eagle Rank.

I am a student in Industrial Education at Iowa State University. For my thesis requirement I have chosen to do a comprehensive study of the relationship between certain Merit Badges you may have earned and the Industrial Arts Program. You have been selected as my main source of information in carrying out this study.

On the following pages is a short questionnaire which I would like you to fill out to the best of your ability. Please answer each part as complete as possible. The last part of the questionnaire concerns questions about each Merit Badge you have earned of those listed.

I will be awaiting return of this completed questionnaire in the enclosed self-addressed envelope.

Thank you for being so helpful. I knew I could trust you.

Sincerely,

Richard C. Eichacker

Approved:

Lowell L. Carver

Lowell L. Carver, Chairman
Industrial Education Curriculum

QUESTIONNAIRE

Name:_____ Address:_____

Location of home: (city),(town)or(rural). Present occupation:_____

Age:__years and__months. Grade in school: (8) (9) (10) (11) (12) (Graduated)

Industrial Arts courses taken in school: ( )Art, ( )Crafts, ( )Electricity, ( )Mechanical Drawing, ( )Metalwork, ( )Woodwork, ( )others

College: (have attended)(am attending)(plan to attend)(do not plen to attend)

Present Scouting position or office being held:_____

Total number of Merit Badges awarded:___. Date of Eagle Rank:___mo.___yr.

PLEASE ANSWER THE FOLLOWING QUESTIONS BY MARKING IN THE APPROPRIATE COLUMN

A. Of those merit badges listed below, mark in column -A- the ones you have earned. --If you have not earned any of these, please answer only questions E, F, and G below and return the questionnaire.
B. Mark in column -B- the order in which they were earned. Number 1,2,3,etc.
C. Mark in column -C- your estimation of the degree of difficulty on a "1" Easy, "2" Medium, "3" Difficult scale. (How hard was it?)
D. Mark in column -D-, "X" if the badge was earned alone, or "O" if worked on together with other Scouts at the same time.
E. Mark in column -E- five other badges in a 1,2,3,4,5, preferance order, that you would like to earn next, if given an equal chance at those listed.
F. Mark in column -F- of all those listed, the five badges which you think would be the easiest to earn.
G. Mark in column -G- of all those listed, the five badges which you think would be the most difficult to earn.

MERIT BADGE	-A-	-B-	-C-	-D-	-E-	-F-	-G-
1. Architecture							
2. Art							
3. Automobiling							
4. Basketry							
5. Bookbinding							
6. Electricity							
7. Farm Mechanics							
8. Home Repairs							
9. Leatherwork							
10. Machinery							
11. Masonry							
12. Mechanical Drawing							
13. Metalwork							
14. Painting							
15. Photography							
16. Plumbing							
17. Pottery							
18. Printing							
19. Radio							
20. Woodcarving							
21. Woodwork							

DIRECTIONS:
Write the names of badges from column -A- here →
Write in space when using alternate "(other)" below.
Number "0", BASKETRY is given as an example.

BADGES EARNED: 0 Basketry, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

WHAT ARE YOUR REASONS FOR SELECTION? 1. Interested 2. Looked Easy 3. School Subject 4. My Job or Work 5. Other Scout Did Same Badge 6. Materials and Equipment Available 7. Repair Work 8. Hobby 9. (other)_____	2														Primary
	6 7 9:6:4														Secondary Reasons
WHAT INFORMATION SOURCES DID YOU USE? 1. Merit Badge Pamphlet 2. Scout Handbook 3. Personnal Contact 4. At Work or Job 5. Library 6. Magazine 7. Visual Aids 8. School Subject 9. (other)_____ 10. None	6														Primary
	7 1 5														Secondary Sources
WHAT PERSONNEL ASSISTED YOU? 1. Scoutmaster 2. Ind. Arts Teacher 3. Camp Instructor 4. Merit Badge Counselor 5. Other Scout Holding Badge 6. Specially Appointed Person 7. Parents 8. Teacher 9. (other)_____ 10. None	6														Primary
	3														Secondary Assistance
WHAT SCHOOL SUBJECTS WERE INFLUENTIAL? 1. Woodworking 2. Metalwork 3. Electricity 4. Mechanical Drawing 5. Crafts 6. Art 7. Gen. Science 8. Machine Shop 9. Auto. Mech. 10. Physics 11. (other)_____ 12. None	5														Primary
	12														Secondary Influence
WHAT DIFFICULTIES DID YOU ENCOUNTER? 1. Applying for Badge 2. Getting Information 3. Personnel Assistance 4. Time Required 5. Tools and Materials 6. Passing Requirements 7. Cost 8. Final Test 9. (other)_____ 10. None	4														Primary
	2 7														Secondary Difficulties

INDUSTRIAL ARTS MERIT BADGES EARNED	NAME THE PROJECTS COMPLETED FOR EACH	WHAT TYPE OF FINAL TEST OR REVIEW WAS GIVEN	COMMENTS AND RECOMMENDATIONS ON EACH OR IN GENERAL
0 - Example Basketry	Made a large basket Recaned a chair	Oral test Explained & displayed projects	Not as easy as first estimated Suggest contact a craftsman for assistance
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

APPENDIX C

Distribution of Questionnaires

Table 24. Iowa eagle scouts to whom questionnaires were sent by area council

Area council[a] Number	Name	Location	Years 1958	1959	1960	Total
171	Southeast Iowa	Burlington	17	29	12	58
172	Hawkeye	Cedar Rapids	32	29	34	95
173	Winnebago	Mason City	27	18	22	67
175	Southwest Iowa	Council Bluffs	0[b]	15	20	35
176	Buffalo Bill	Davenport	26	14	36	76
177	Tall Corn	Des Moines	37	65	55	157
178	Northeast Iowa	Dubuque	5	5	4	14
179	Prairie Gold	Fort Dodge	20	26	11	57
184	Southern Iowa	Ottumwa	8	2	24	34
185	Sergeant Floyd	Sioux City	16	20	26	62
186	Wapsipinicon	Waterloo	24	27	19	70
Total			212	250	263	725

[a](14, p. 220).

[b]Names not available.